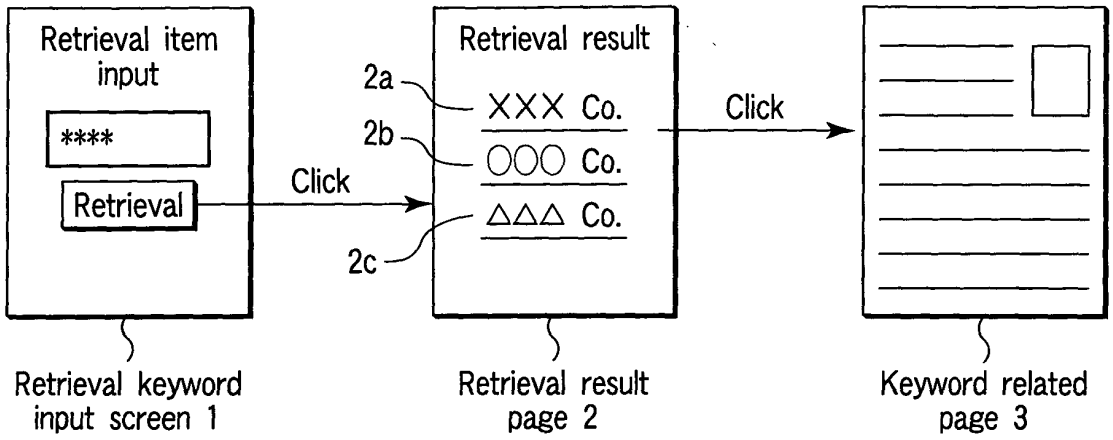

FIG. 1 PRIOR ART

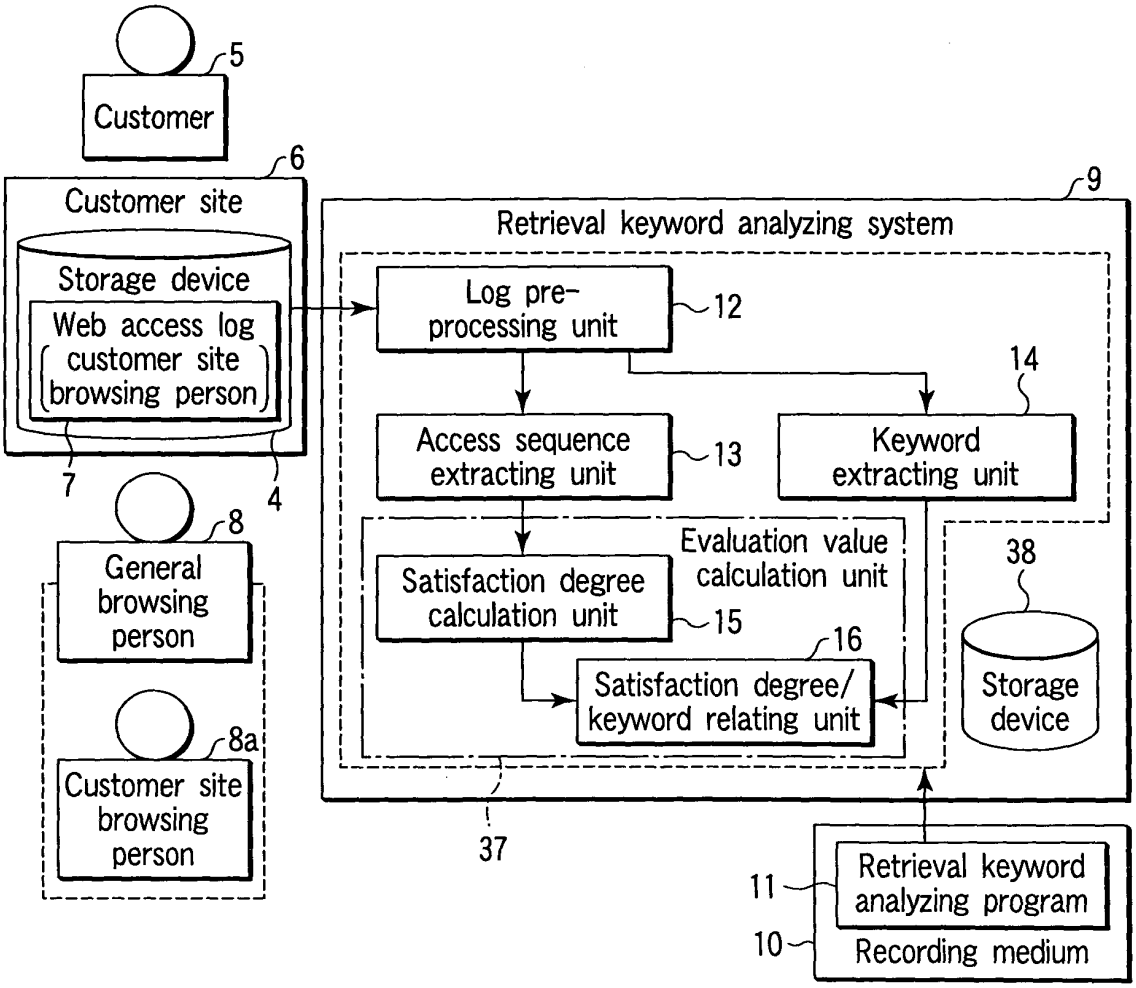

FIG. 2

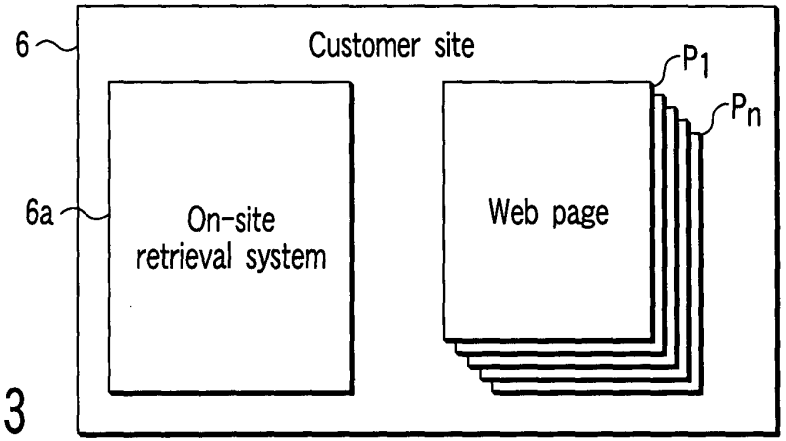

FIG. 3

Information contained in Web access log (customer site browsing person)

Host name	User ID	Date	Time	Request	End code	Number of transferred bytes	Reference information	User agent
pc001.○○○.co.jp	—	2002/2/14	18:56:14	/index.html	200	400	—	M○○illa/4.0 (compatible:M○IE…
ws20.△△△.co.jp	—	2002/2/14	18:57:30	/cgi/login.cgi	200	700	—	M○○illa/4.7 [△△5LLL] (X11…
pc001.○○○.co.jp	—	2002/2/14	18:58:01	/products/index.html	200	2400	—	w△m/0.3+m□e-p21-26+m○e-1.5.2
pc001.○○○.co.jp	—	2002/2/14	18:58:40	products/info/p001.pdf	200	3000	—	M○○illa/4.7 [△△5LLL] (X11…
ws20.△△△.co.jp	—	2002/2/14	18:59:10	/cgi/order.cgi	200	700	—	M○○illa/4.0 (compatible:M○IE…

FIG. 4

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Pre-processed data

View ID	Host name	User ID	Date	Time	Request	Reference information	User agent
View 1	pc001.○○○.co.jp	—	2002/2/14	18:56:14	/index.html	—	M○○illa/4.0 (compatible:M○IE…
View 2	ws20.△△△.co.jp	—	2002/2/14	18:57:30	/cgi/login.cgi	—	M○○illa/4.7 [△△5LLL] (X11…
View 3	pc001.○○○.co.jp	—	2002/2/14	18:58:01	/products/index.html	—	w△m/0.3+m□e-p21-26+m○e-1.5.2
View 4	pc001.○○○.co.jp	—	2002/2/14	18:58:40	products/info/p001.pdf	—	M○○illa/4.7 [△△5LLL] (X11…
View 5	ws20.△△△.co.jp	—	2002/2/14	18:59:10	/cgi/order.cgi	—	M○○illa/4.0 (compatible:M○IE…

FIG. 5

Access sequence data

View ID	Visit ID	Visitor ID	Date	Time	Request
View 1	Visit 1	Visitor 1	2002/2/14	18:56:14	/AAA.html
View 2	Visit 2	Visitor 2	2002/2/14	18:57:30	/BBB.cgi
View 3	Visit 1	Visitor 1	2002/2/14	18:58:01	/CCC.html
View 4	Visit 2	Visitor 2	2002/2/14	18:58:40	/GGG/DDD.cgi
View 5	Visit 3	Visitor 1	2002/2/14	19:42:10	/EEE.html

FIG. 6

Request to retrieval system

Example 1	http://www.○○○.co.jp/search.cgi?q=xxxx
Example 2	http://www.○○○.co.jp/search.cgi?q=yyyy&page=10
Example 3	http://www.○○○.co.jp/search.cgi?q=%E3%82%8A%E3%82%93%E3%81%94

FIG. 7

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Place of retrieval system and query pattern

Place of retrieval system	Query pattern
http://www.○○○.co.jp/search.cgi	q

FIG. 8

Extracted parameter

	Query pattern
Example 1	xxxx
Example 2	yyyy
Example 3	%E3%82%8A%E3%82%93%E3%81%94

FIG. 9

Keyword data

View ID	Retrieval keyword
View 6	りんご
View 21	apple
View 43	banana
View 56	砂糖
View 81	カレイ

FIG. 10

After-retrieval browsing time and satisfaction degree

After-retrieval browsing time	Satisfaction degree
No viewing	0
Browsing only one page	0
Less than 1 minute	10
1 to 2 minutes	20
2 to 3 minutes	30
3 to 5 minutes	40
5 to 7 minutes	50
7 to 10 minutes	60
10 to 15 minutes	70
15 to 20 minutes	80
20 to 25 minutes	90
30 minutes or more	100

FIG. 11

Access sequence data

View ID	Visit ID	Satisfaction degree data
View 1	Visit 1	0
View 2	Visit 2	20
View 3	Visit 1	0
View 4	Visit 2	20
View 5	Visit 3	10

FIG. 12

Relation between satisfaction degree data and keyword data

View ID	Satisfaction degree data	Retrieval keyword
View 6	10	りんご
View 21	0	apple
View 83	30	りんご
View 121	20	砂糖
View 137	0	apple

FIG. 13

Relation data

Retrieval keyword	Satisfaction degree data
りんご	23.4
apple	17.8
砂糖	2.4
肉野菜	2.4
蜂蜜	11.6

FIG. 14

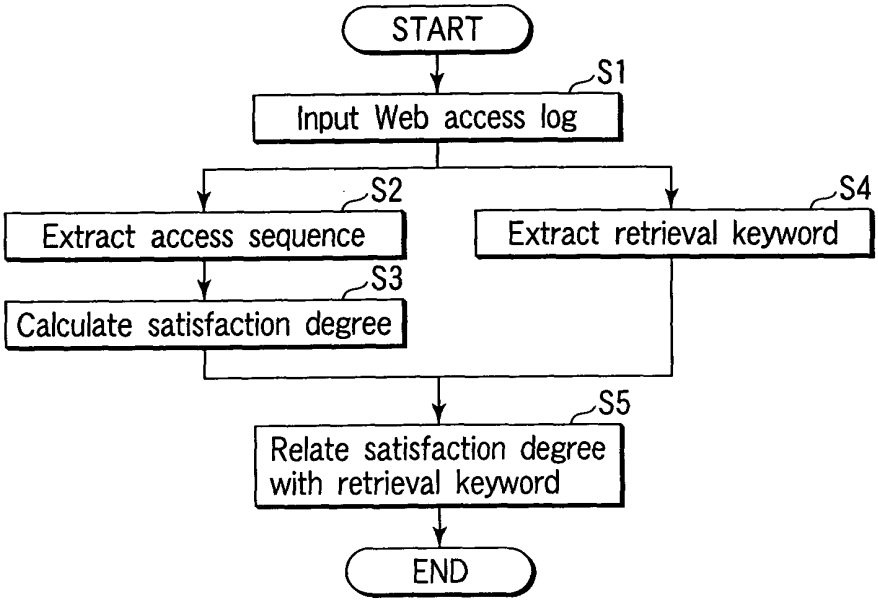

FIG. 15

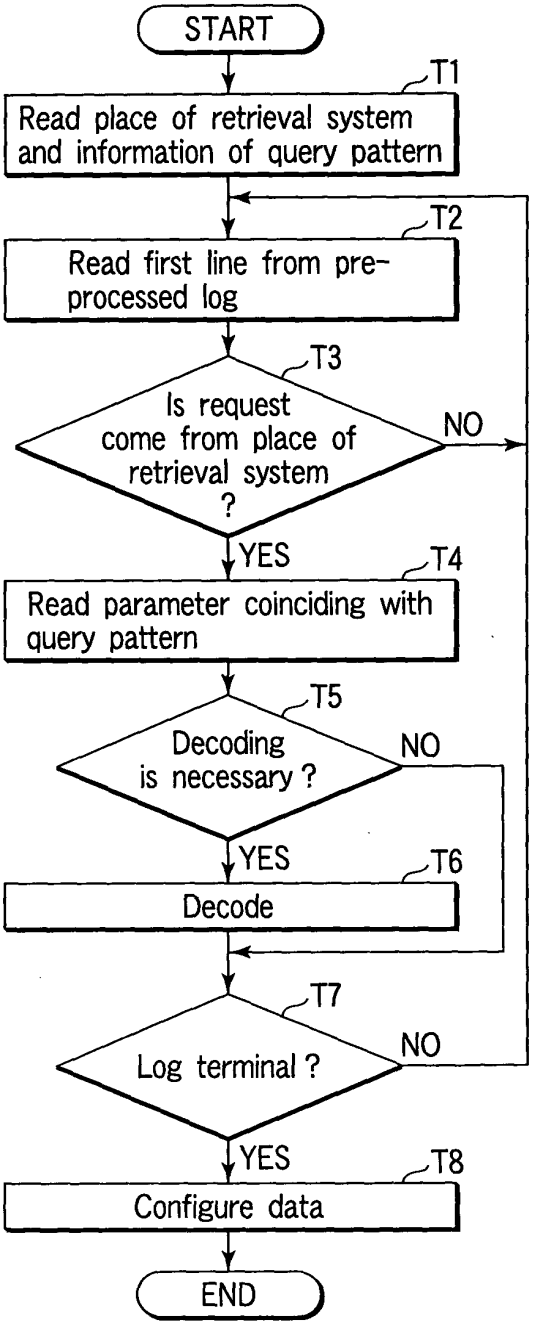
START
T1
Read place of retrieval system and information of query pattern
T2
Read first line from pre-processed log
T3
Is request come from place of retrieval system ?
NO
YES
T4
Read parameter coinciding with query pattern
T5
Decoding is necessary ?
NO
YES
T6
Decode
T7
Log terminal ?
NO
YES
T8
Configure data
END

FIG. 16

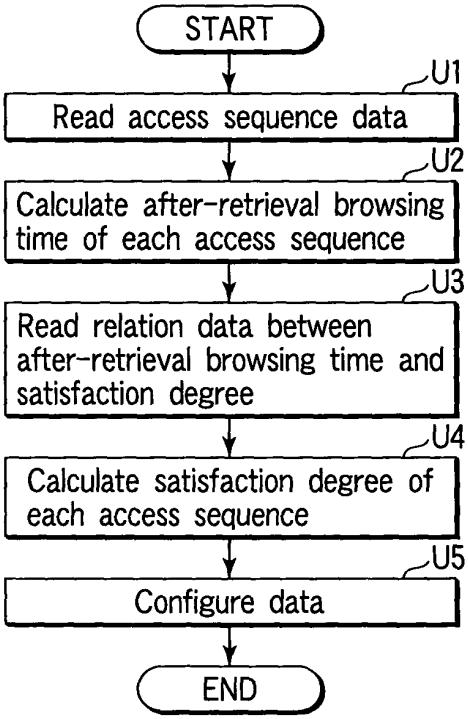
START
U1
Read access sequence data
U2
Calculate after-retrieval browsing time of each access sequence
U3
Read relation data between after-retrieval browsing time and satisfaction degree
U4
Calculate satisfaction degree of each access sequence
U5
Configure data
END

FIG. 17

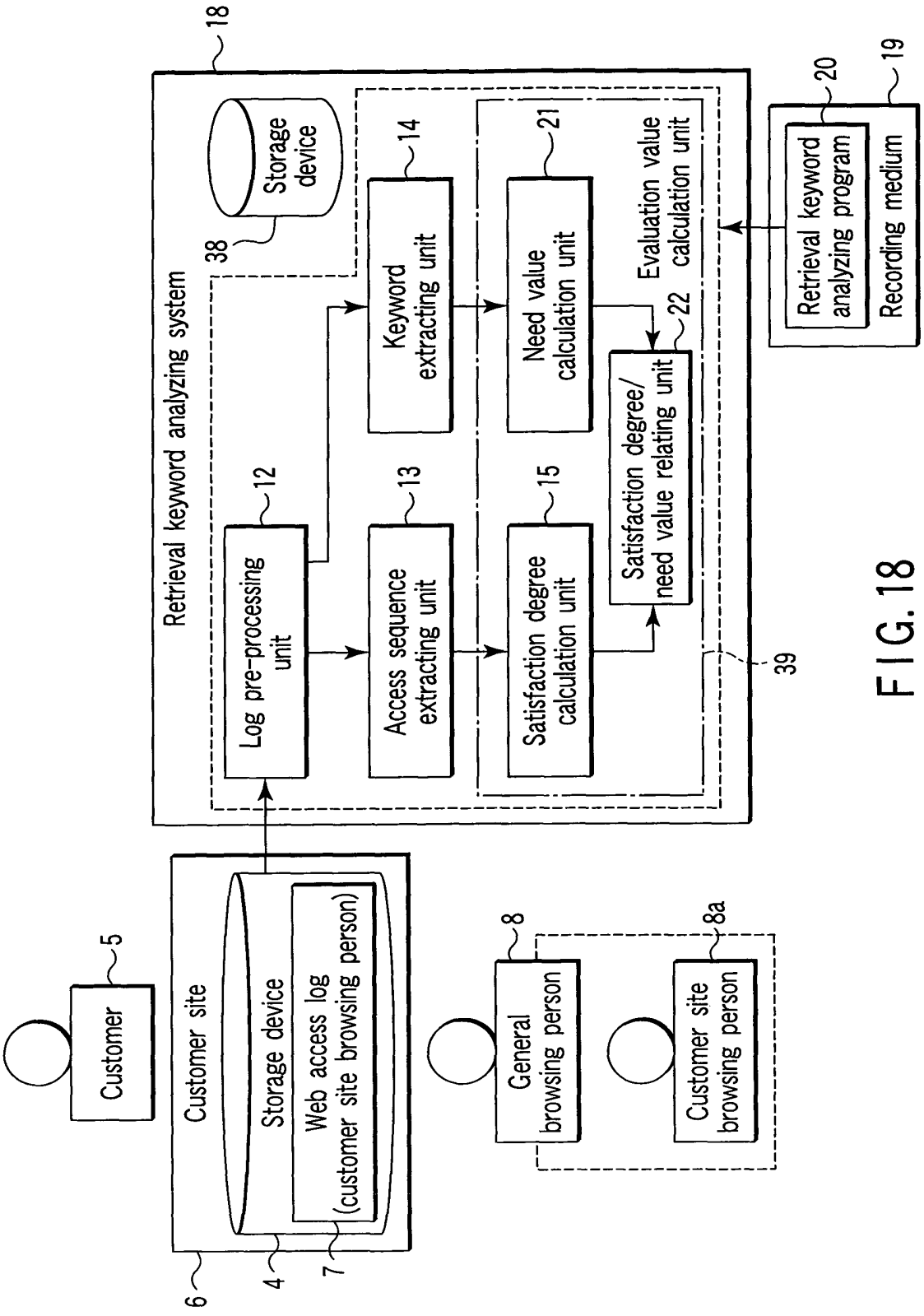
18
Retrieval keyword analyzing system
Storage device
38
Keyword extracting unit
14
Need value calculation unit
21
Evaluation value calculation unit
22
Satisfaction degree/ need value relating unit
Log pre-processing unit
12
Access sequence extracting unit
13
Satisfaction degree calculation unit
15
39
20
Retrieval keyword analyzing program
Recording medium
19
Customer
5
Customer site
Storage device
Web access log (customer site browsing person)
6
4
7
General browsing person
8
Customer site browsing person
8a

FIG. 18

Need value data

Retrieval keyword	Need value
りんご	21.5
apple	14.6
砂糖	3.6
肉野菜	17.6
蜂蜜	2.7

FIG. 19

Relation data

Retrieval keyword	Need value	Satisfaction degree
りんご	21.5	23.4
apple	14.6	17.8
砂糖	3.6	2.4
肉野菜	17.6	2.4
蜂蜜	2.7	11.6

FIG. 20

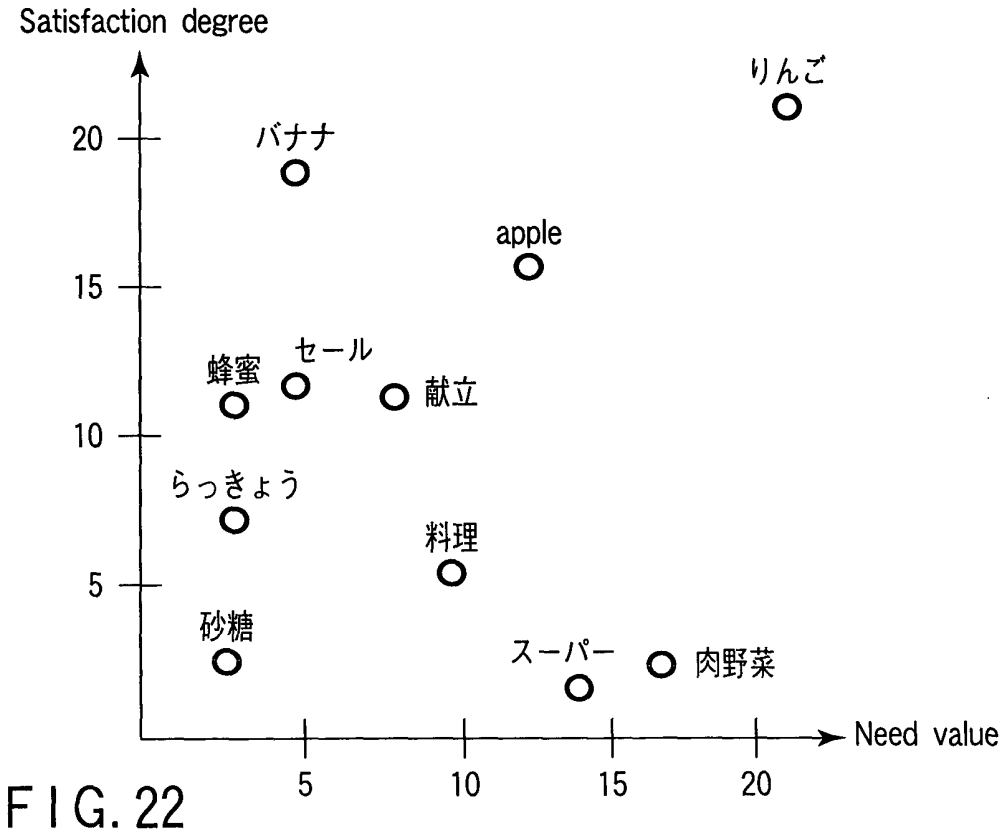

FIG. 22

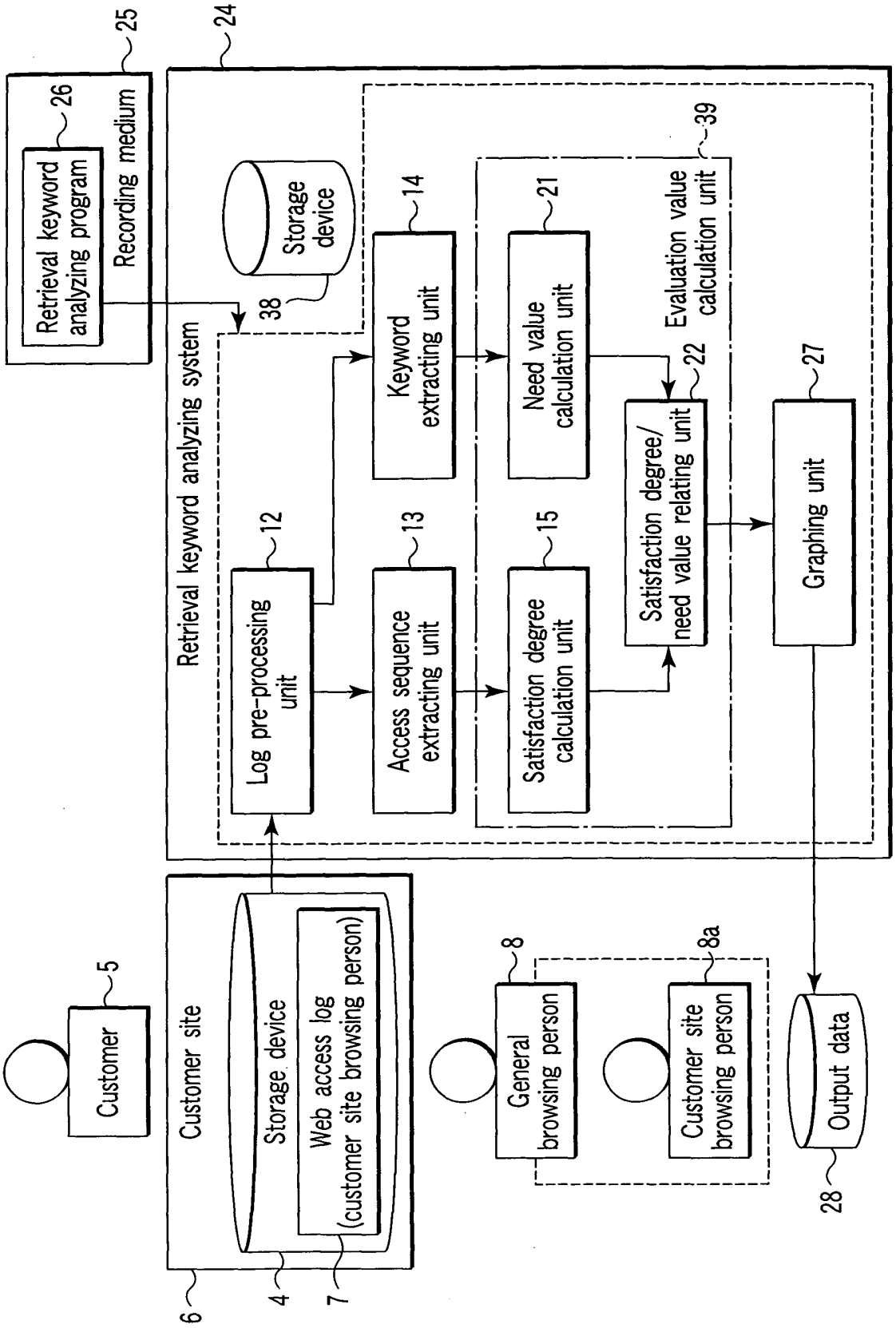
Retrieval keyword analyzing program
Recording medium
26
25
24
Retrieval keyword analyzing system
Storage device
38
Keyword extracting unit
14
Need value calculation unit
21
Evaluation value calculation unit
39
Satisfaction degree/ need value relating unit
22
Graphing unit
27
Log pre-processing unit
12
Access sequence extracting unit
13
Satisfaction degree calculation unit
15
Customer
5
Customer site
Storage device
Web access log (customer site browsing person)
4
7
6
General browsing person
8
Customer site browsing person
8a
Output data
28

FIG. 21

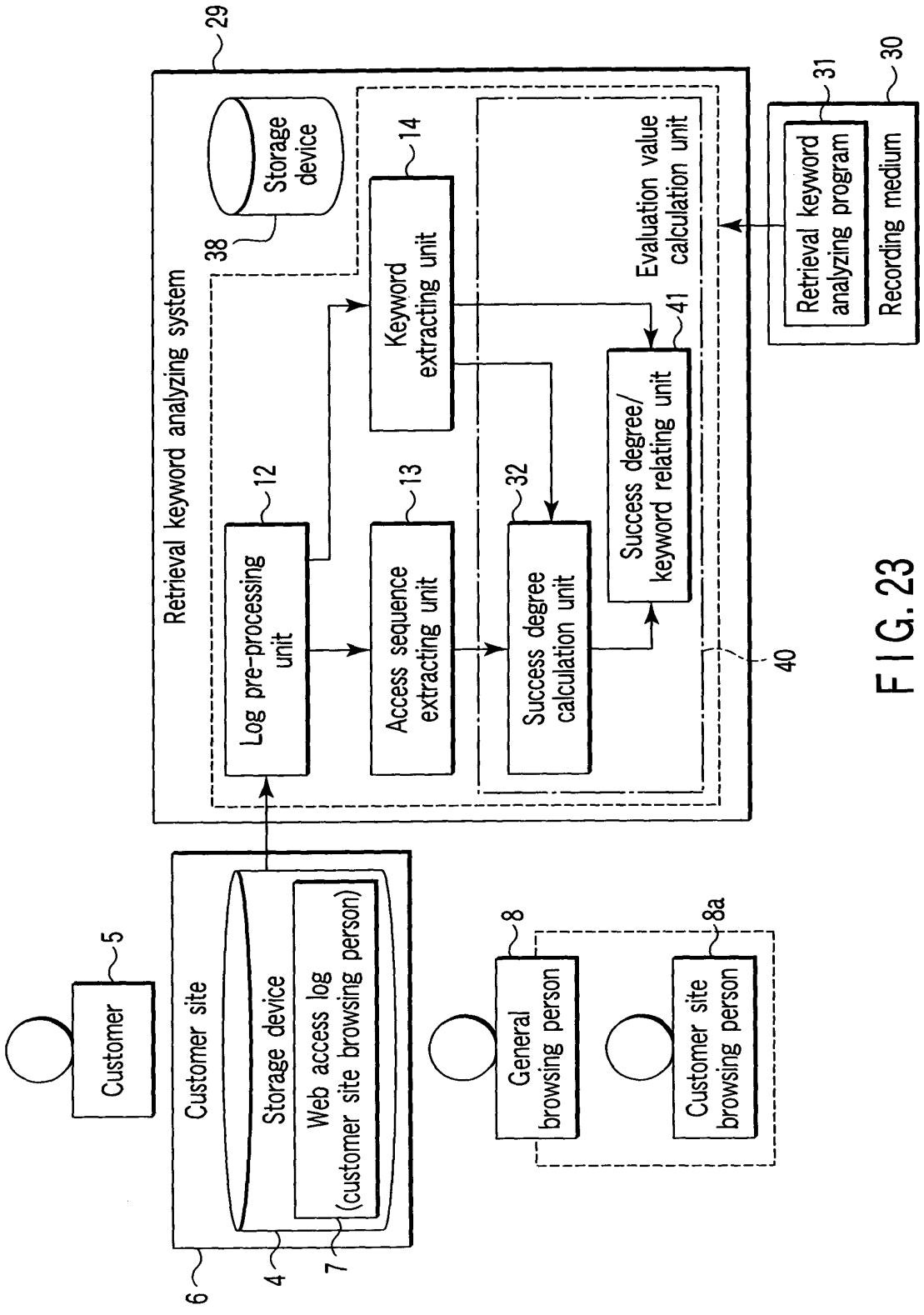
29
Retrieval keyword analyzing system
Storage device
38
Keyword extracting unit
14
Evaluation value calculation unit
41
Log pre-processing unit
12
Access sequence extracting unit
13
Success degree calculation unit
32
Success degree/ keyword relating unit
40
Retrieval keyword analyzing program
Recording medium
31
30
Customer
5
Customer site
Storage device
Web access log (customer site browsing person)
6
4
7
General browsing person
8
Customer site browsing person
8a

FIG. 23

Access demand page list

Retrieval keyword	Access demand page
りんご	/apple/index.html
apple	/apple/index.html
肉野菜	/meat/index.html
肉野菜	/vegetable/index.html
...	...
(Others)	

FIG. 24

Success degree weighting rule

Number of clicks from retrieval result page	Success degree
1	100
2	80
3	60
4	40
5 or more	20
No arrival	0

FIG. 25

Intermediate generation data (1)

View ID	Visit ID	Request	Retrieval keyword
View 20	Visit 6	/index.html	
View 21	Visit 6	/search.cgi	
View 22	Visit 6	/search.cgi?q=%E3%82%8A%E3%82%93%E3%81%94	りんご
View 26	Visit 6	/general/index.html	
View 28	Visit 6	/apple/index.html	
View 37	Visit 6	/apple/tsugaru.html	
View 45	Visit 7	/index.html	
View 47	Visit 7	/search.cgi	
View 48	Visit 7	/search.cgi?q=apple	apple
...	...	...	...

FIG. 26

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Intermediate generation data (2)

Visit ID	Retrieval keyword	Success degree
Visit 6	りんご	80
Visit 7	apple	100
Visit 21	肉野菜	0
Visit 23	スーパー	60
Visit 30	りんご	20

FIG. 27

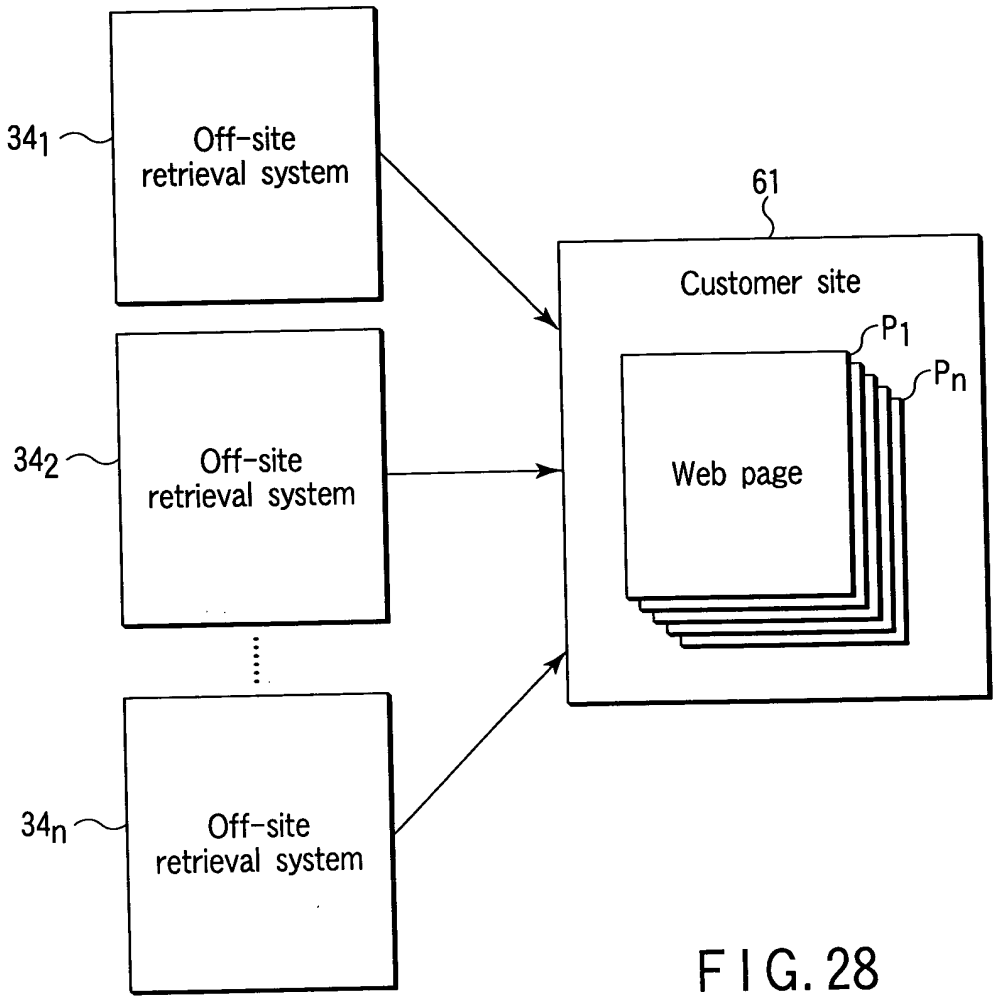

FIG. 28

Web access log with reference information

Host name	User ID	Date	Time	Request	End code	Number of transferred bytes	Reference information	User agent
pc001.○○○.co.jp	—	2002/2/14	18:56:14	/index.html	200	400	http://www.○○○.ne.jp/□□□…	M○○illa/4.0 (compatible:M○IE…
ws20.△△△.co.jp	—	2002/2/14	18:57:30	/cgi/login.cgi	200	700	—	M○○illa/4.7 [△△5LLL] (X11…
pc001.○○○.co.jp	—	2002/2/14	18:58:01	/products/index.html	200	2400	http://www.XXX.com/△△△…	w△m/0.3+m□e-p21-26+m○e-1.5.2
pc001.○○○.co.jp	—	2002/2/14	18:58:40	products/info/p001.pdf	200	3000	http://www.○○○.ne.jp/◎◎◎…	M○○illa/4.7 [△△5LLL] (X11…
ws20.△△△.co.jp	—	2002/2/14	18:59:10	/cgi/order.cgi	200	700	http://www.○○○.ne.jp/□□□…	M○○illa/4.0 (compatible:M○IE…

FIG. 29

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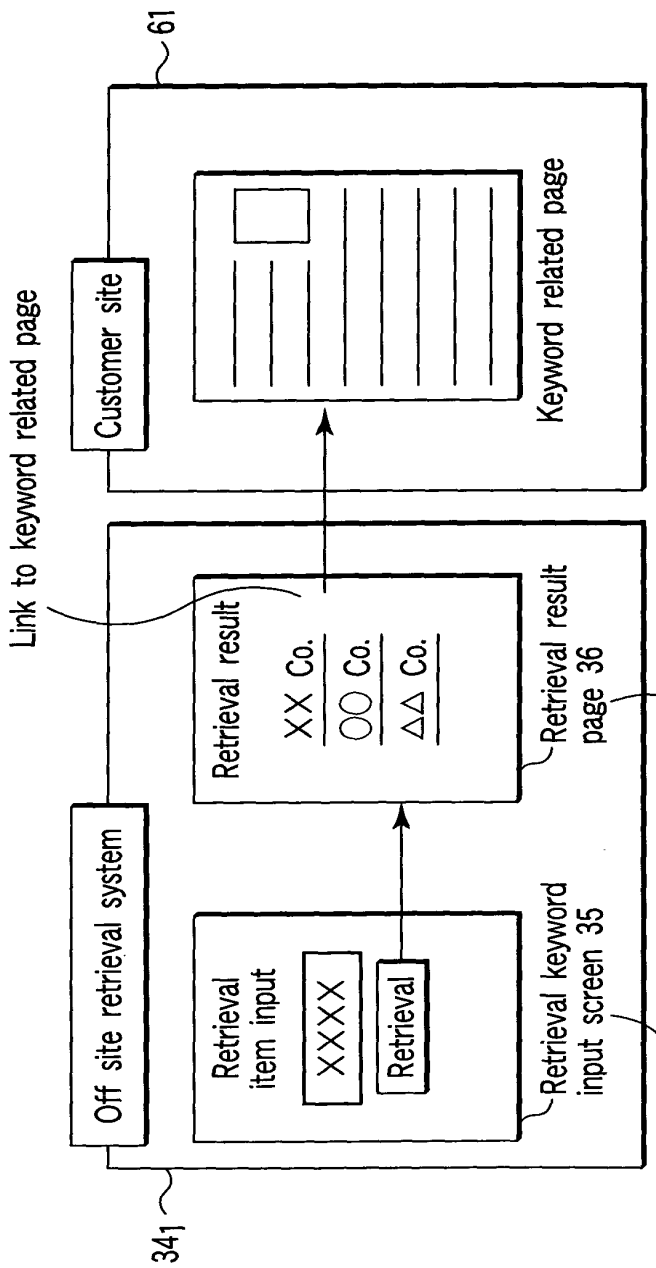

61
Customer site
Keyword related page
Link to keyword related page
Off site retrieval system
Retrieval result
XX Co.
○○ Co.
ΔΔ Co.
Retrieval result page 36
Retrieval item input
XXXX
Retrieval
Retrieval keyword input screen 35
341
http://www.□□□.ne.jp/search.cgi
http://www.□□□.ne.jp/search.cgi?kw=XXXX
(Left in Web access log of customer site as reference information)

FIG. 30

Pattern

URL of retrieval system	Query pattern
http://www.△△△.com/	keyword
http://www.□□□.ne.jp/	kw
http://www.○○○.co.jp/	query
http://www.×××.co.jp/	word
http://www.◎◎◎.com/	q

FIG. 31

Access sequence data

View ID	Visit ID	Visitor ID	Date	Time	Request	Reference flag
View 1	Visit 1	Visitor 1	2002/2/14	18:56:14	/AAA.html	1
View 2	Visit 2	Visitor 2	2002/2/14	18:57:30	/BBB.cgi	0
View 3	Visit 1	Visitor 1	2002/2/14	18:58:01	/CCC.html	0
View 4	Visit 2	Visitor 2	2002/2/14	18:58:40	/GGG/DDD.cgi	0
View 5	Visit 3	Visitor 1	2002/2/14	19:42:10	/EEE.html	1

FIG. 32

Keyword data

View ID	Keyword contained in reference information
View 6	りんご
View 21	apple
View 43	banana
View 56	砂糖
View 81	カレイ

FIG. 33

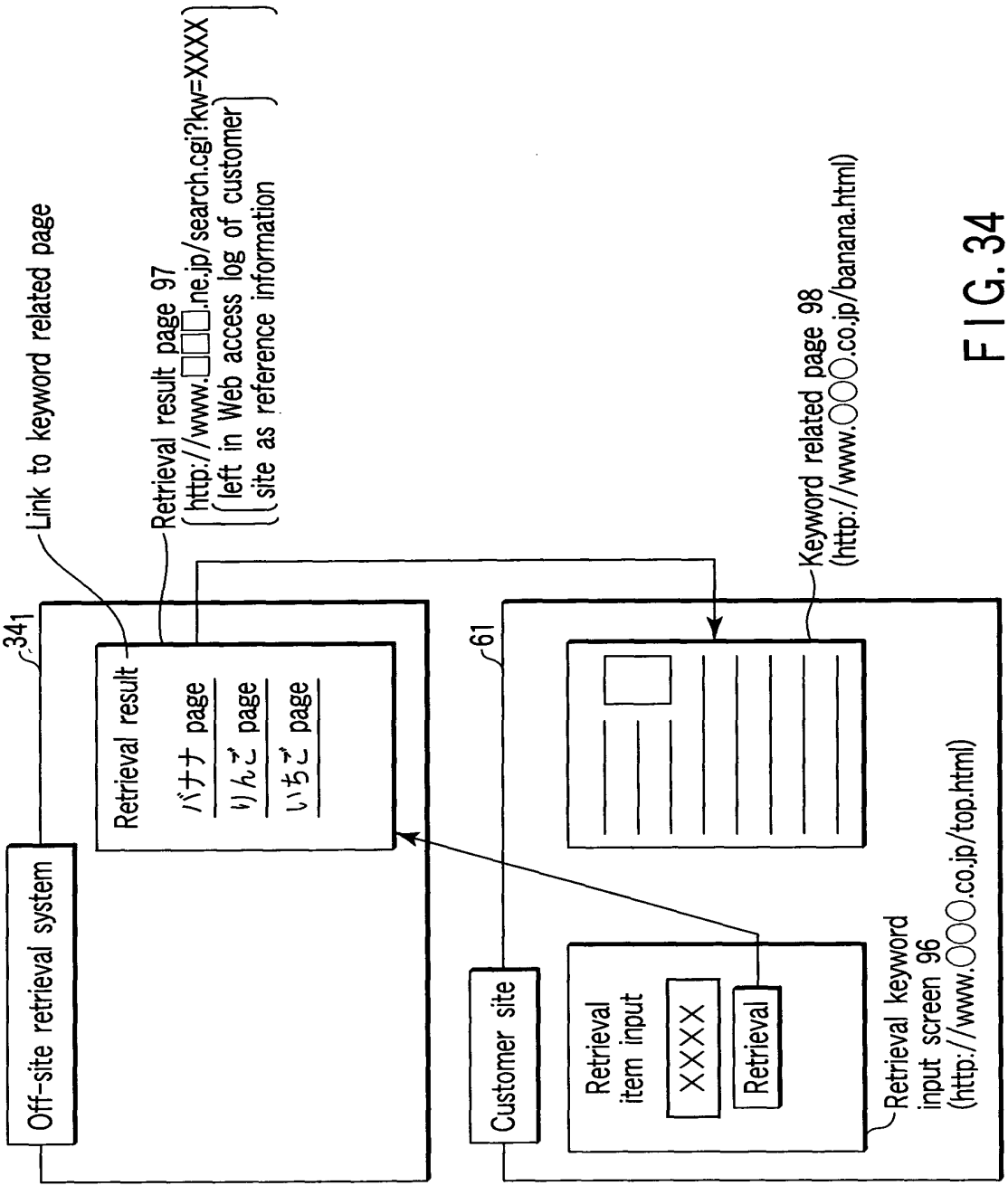

Link to keyword related page
Retrieval result page 97
(http://www.□□□.ne.jp/search.cgi?kw=XXXX
(left in Web access log of customer
site as reference information
Keyword related page 98
(http://www.○○○.co.jp/banana.html)
341
Retrieval result
バナナ page
りんご page
いちご page
Off-site retrieval system
61
Customer site
Retrieval item input
XXXX
Retrieval
Retrieval keyword input screen 96
(http://www.○○○.co.jp/top.html)

FIG. 34

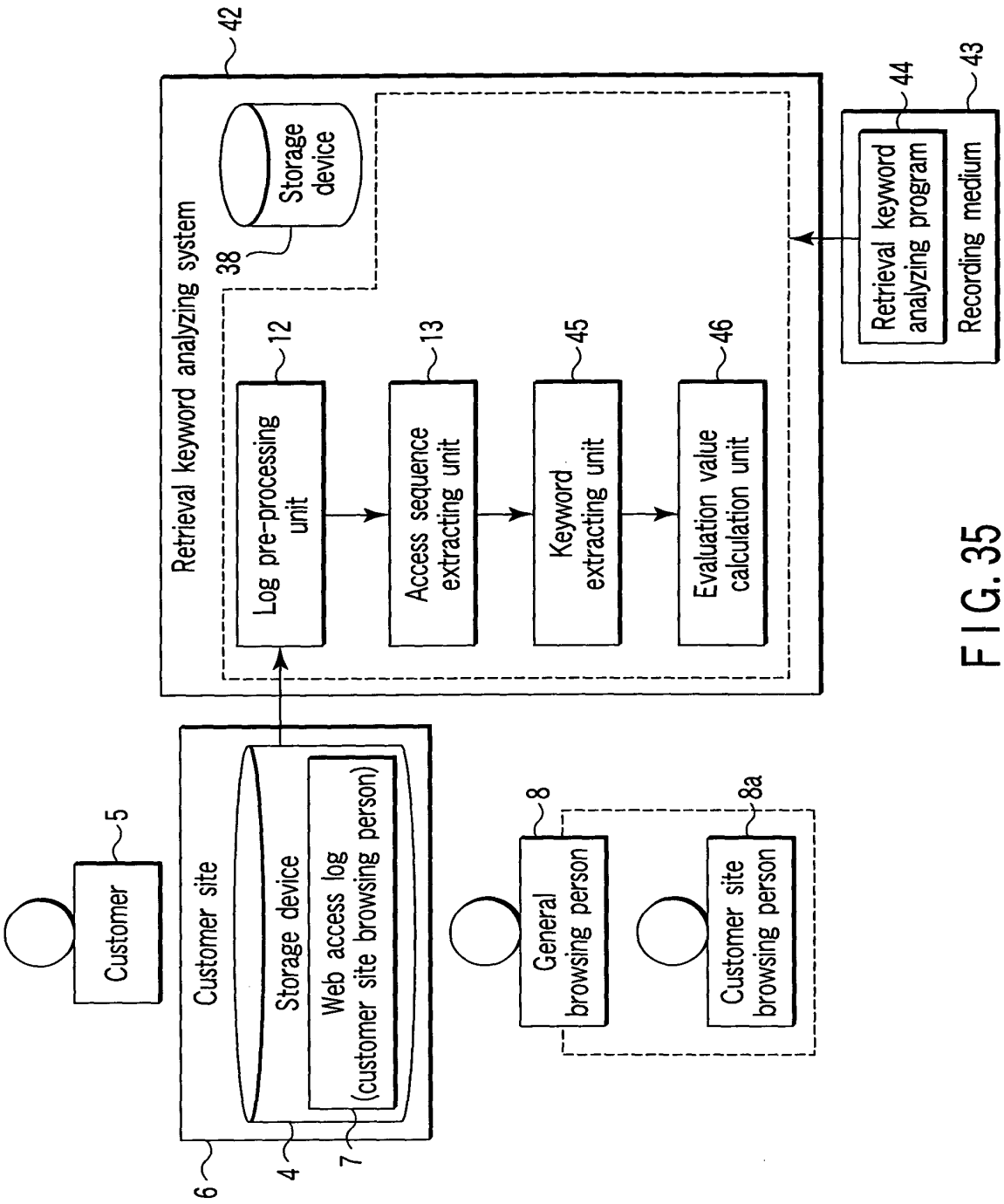

42
Retrieval keyword analyzing system
Storage device
38
12
Log pre-processing unit
13
Access sequence extracting unit
45
Keyword extracting unit
46
Evaluation value calculation unit
44
Retrieval keyword analyzing program
43
Recording medium
5
Customer
Customer site
Storage device
Web access log (customer site browsing person)
6
4
7
8
General browsing person
8a
Customer site browsing person

FIG. 35

Access sequence/keyword data

View ID	Visit ID	Visitor ID	Date	Time	Retrieval keyword
View 1	Visit 1	Visitor 1	2002/2/14	18:56:14	
View 2	Visit 2	Visitor 2	2002/2/14	18:57:30	りんご
View 3	Visit 1	Visitor 1	2002/2/14	18:58:01	
View 4	Visit 2	Visitor 2	2002/2/14	18:58:40	
View 5	Visit 3	Visitor 1	2002/2/14	19:42:10	たまねぎ

FIG. 36

Intermediate generation data

View ID	Visit ID	Satisfaction degree data	Retrieval keyword
View 1	Visit 1	0	
View 2	Visit 2	20	りんご
View 3	Visit 1	0	
View 4	Visit 2	20	
View 5	Visit 3	10	たまねぎ

FIG. 37

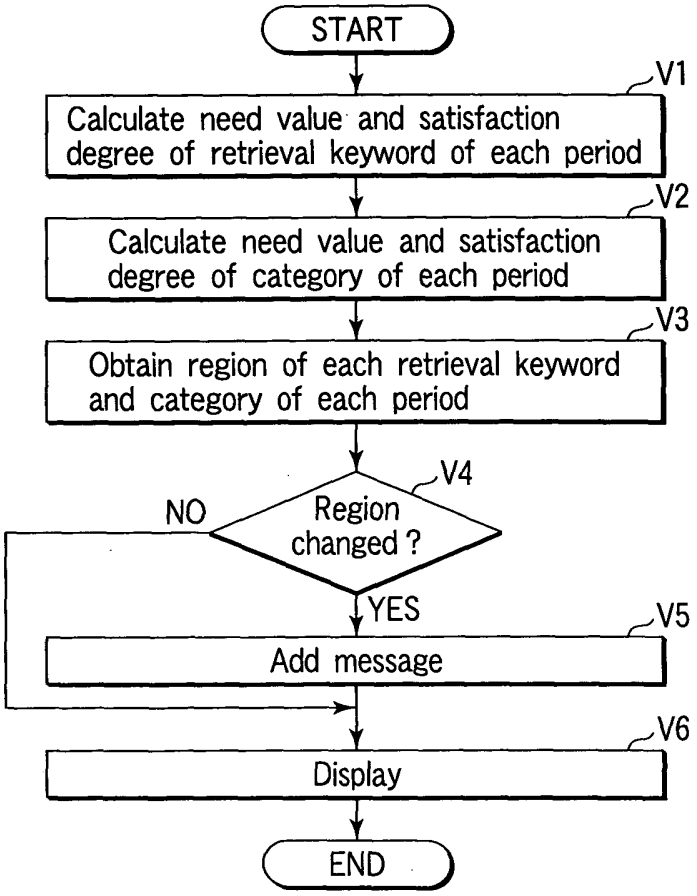


FIG. 39

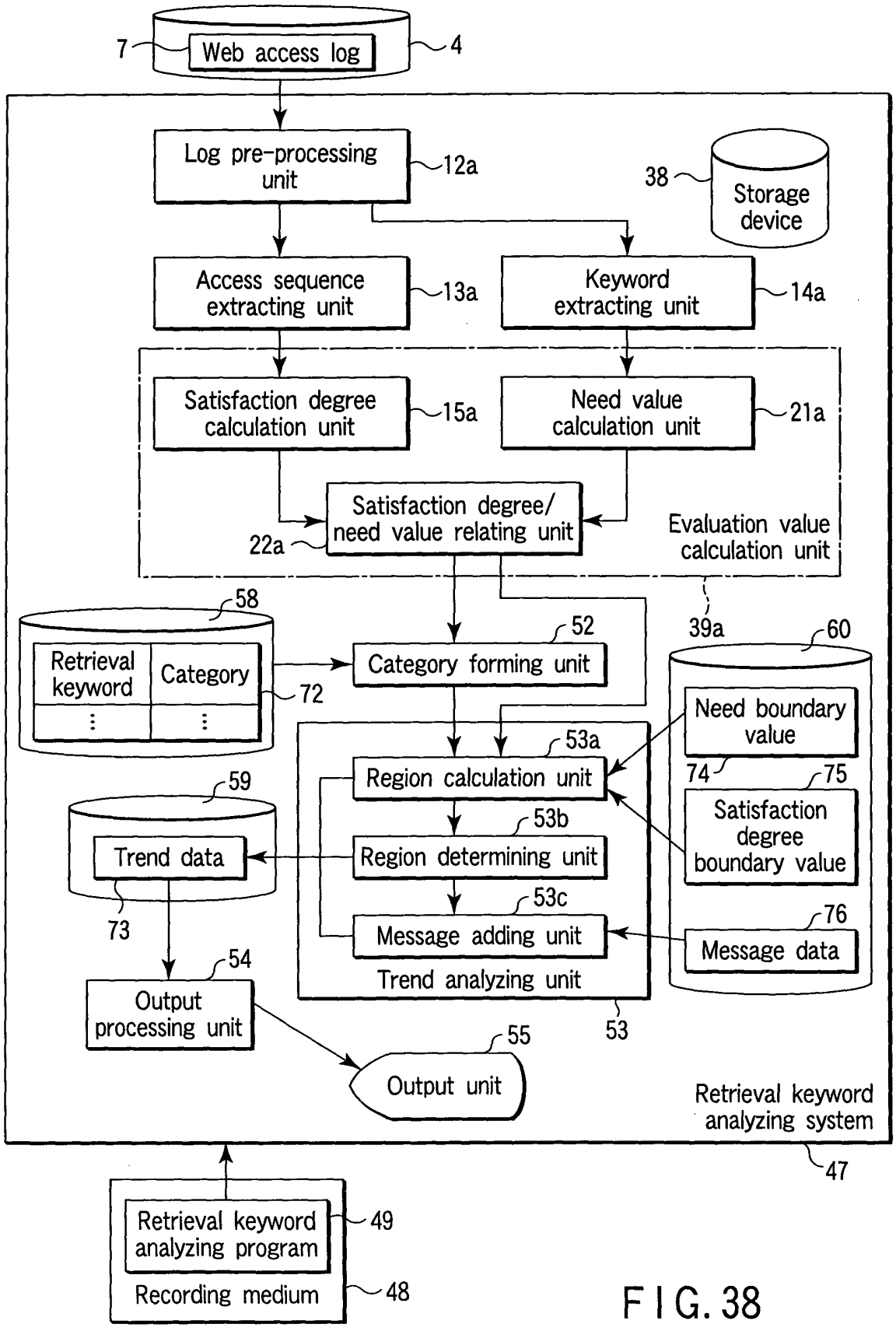

7
Web access log
4
Log pre-processing unit
12a
38
Storage device
Access sequence extracting unit
13a
Keyword extracting unit
14a
Satisfaction degree calculation unit
15a
Need value calculation unit
21a
Satisfaction degree/ need value relating unit
22a
Evaluation value calculation unit
39a
58
Retrieval keyword
Category
72
52
Category forming unit
60
Need boundary value
74
75
Satisfaction degree boundary value
53a
Region calculation unit
59
Trend data
73
53b
Region determining unit
53c
Message adding unit
76
Message data
Trend analyzing unit
53
54
Output processing unit
55
Output unit
Retrieval keyword analyzing system
47
Retrieval keyword analyzing program
49
Recording medium
48

FIG. 38

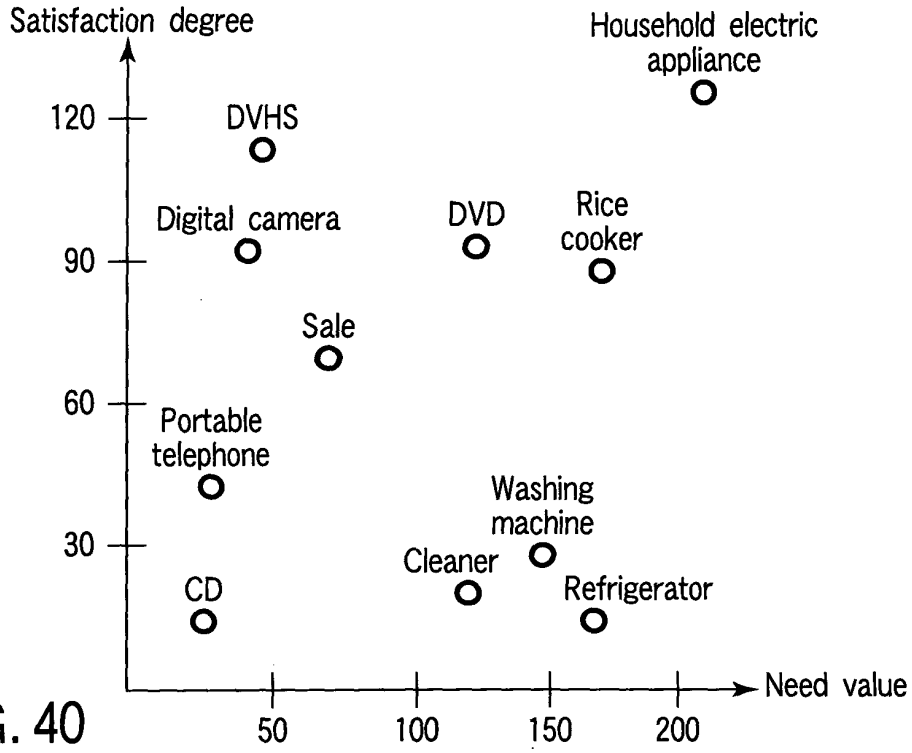


FIG. 40

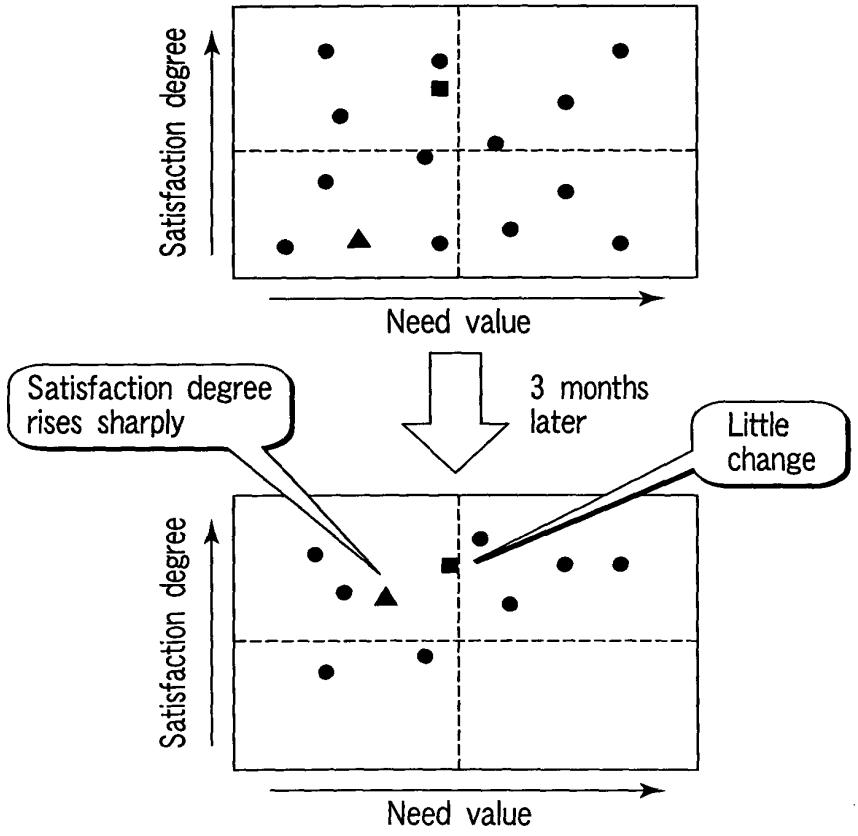


FIG. 42

(Trend of each retrieval keyword)

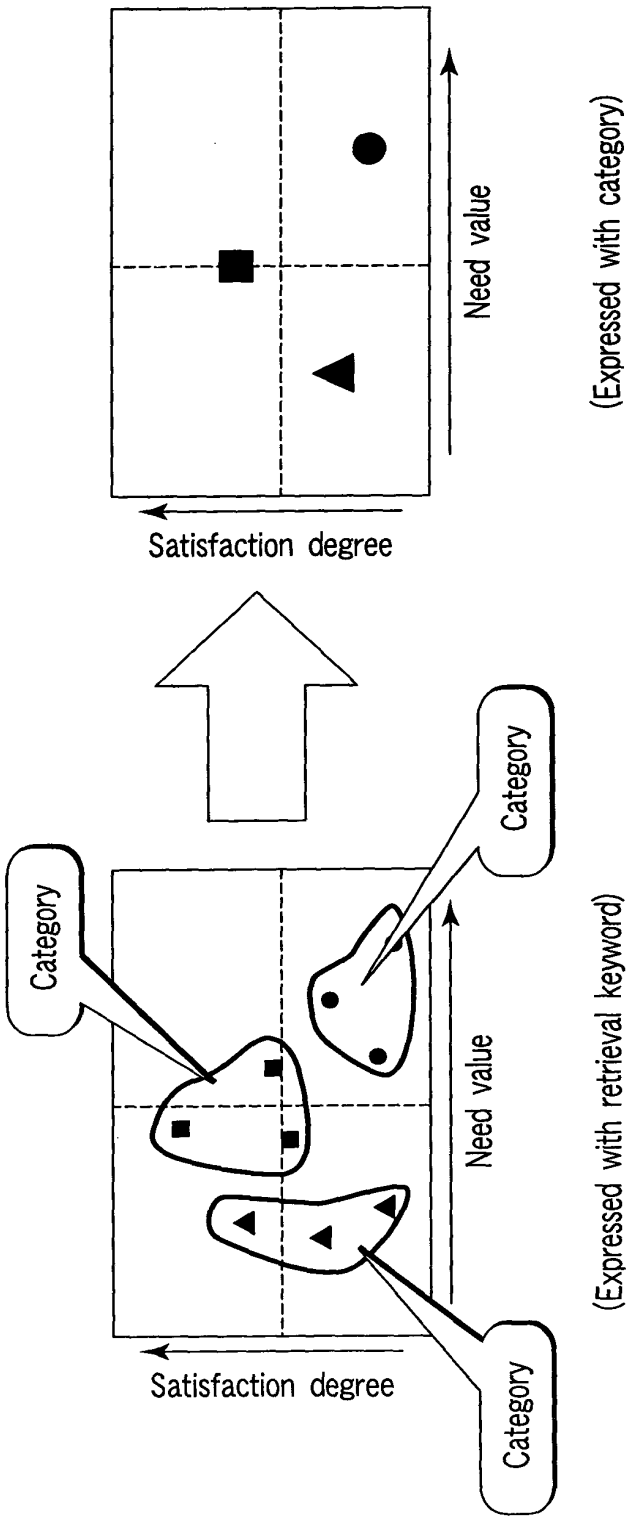

Need value
Satisfaction degree
(Expressed with category)
Category
Category
Category
Need value
Satisfaction degree
(Expressed with retrieval keyword)

FIG. 41

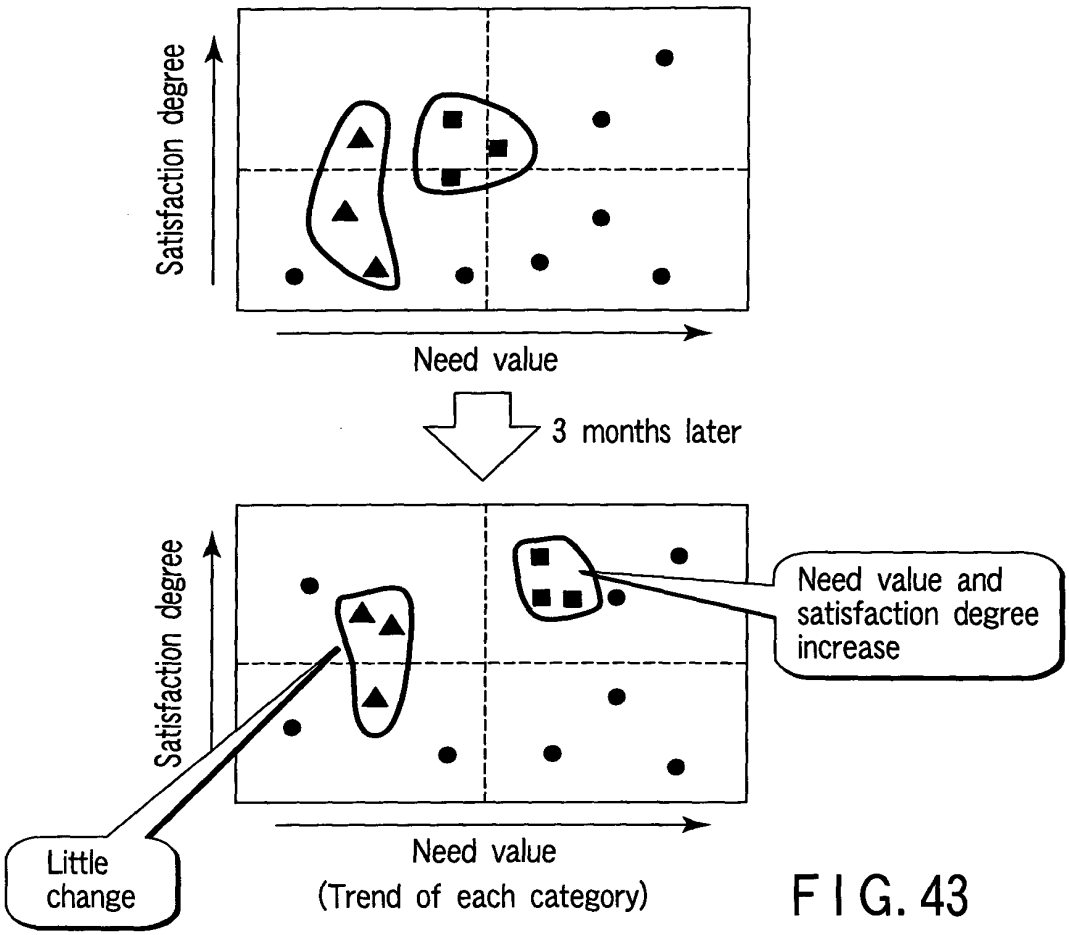

Satisfaction degree
Need value
3 months later
Satisfaction degree
Need value and satisfaction degree increase
Little change
Need value
(Trend of each category)

FIG. 43

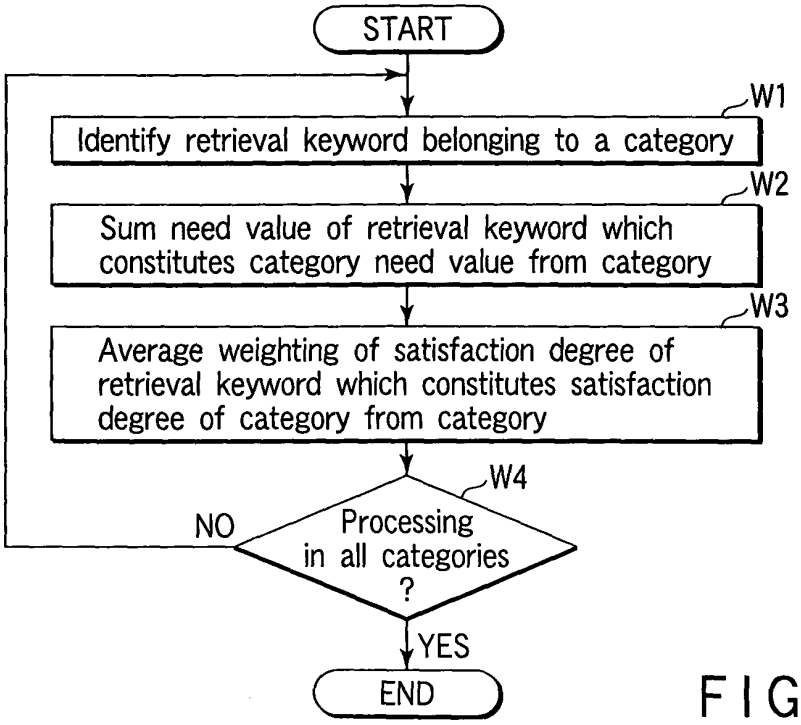

START
W1
Identify retrieval keyword belonging to a category
W2
Sum need value of retrieval keyword which constitutes category need value from category
W3
Average weighting of satisfaction degree of retrieval keyword which constitutes satisfaction degree of category from category
W4
Processing in all categories ?
NO
YES
END

FIG. 44

Category data 72

Keyword	Category
Buffet style	Gourmandism
Party	Gourmandism
Lunch	Gourmandism
Asthma	Health
House dust	Health

Relation data 77

Keyword	Need	Satisfaction degree
Buffet style	155	169
Party	93	638
Lunch	124	221
Asthma	77	226
House dust	177	106

Categorized data 78

Category	Need	Satisfaction degree
Gourmandism	372	304
Health	254	142

FIG. 45

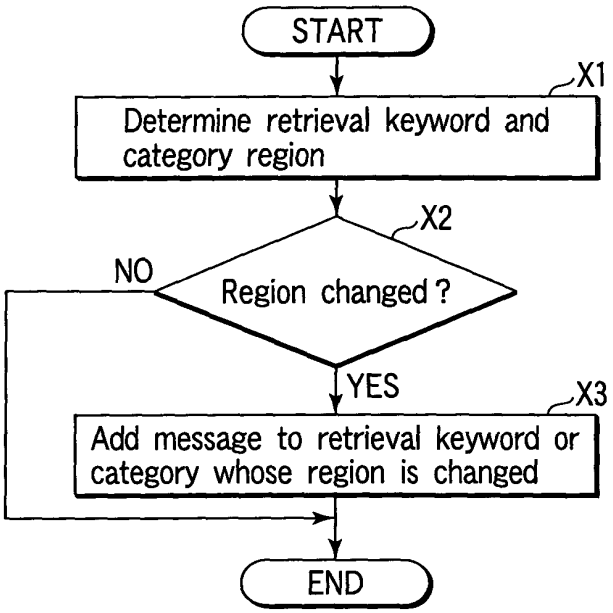

START
X1
Determine retrieval keyword and category region
X2
NO
Region changed ?
YES
X3
Add message to retrieval keyword or category whose region is changed
END

FIG. 46

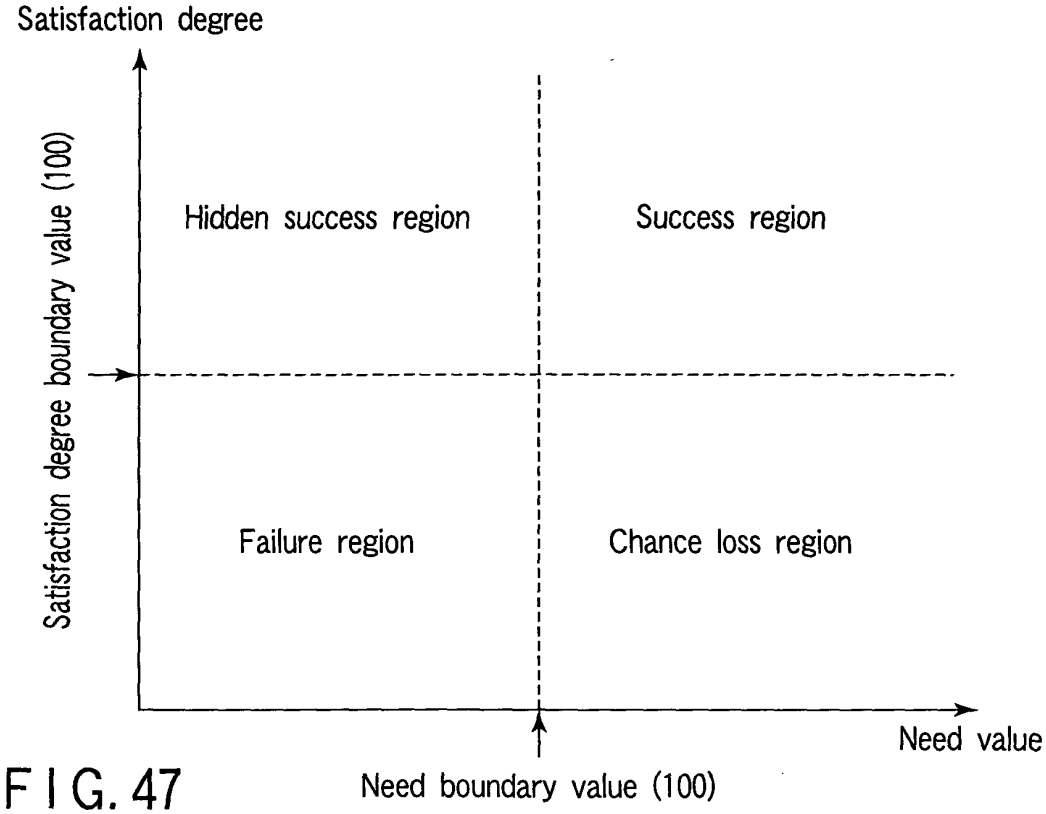

Satisfaction degree
Satisfaction degree boundary value (100)
Hidden success region
Success region
Failure region
Chance loss region
Need value
Need boundary value (100)

FIG. 47

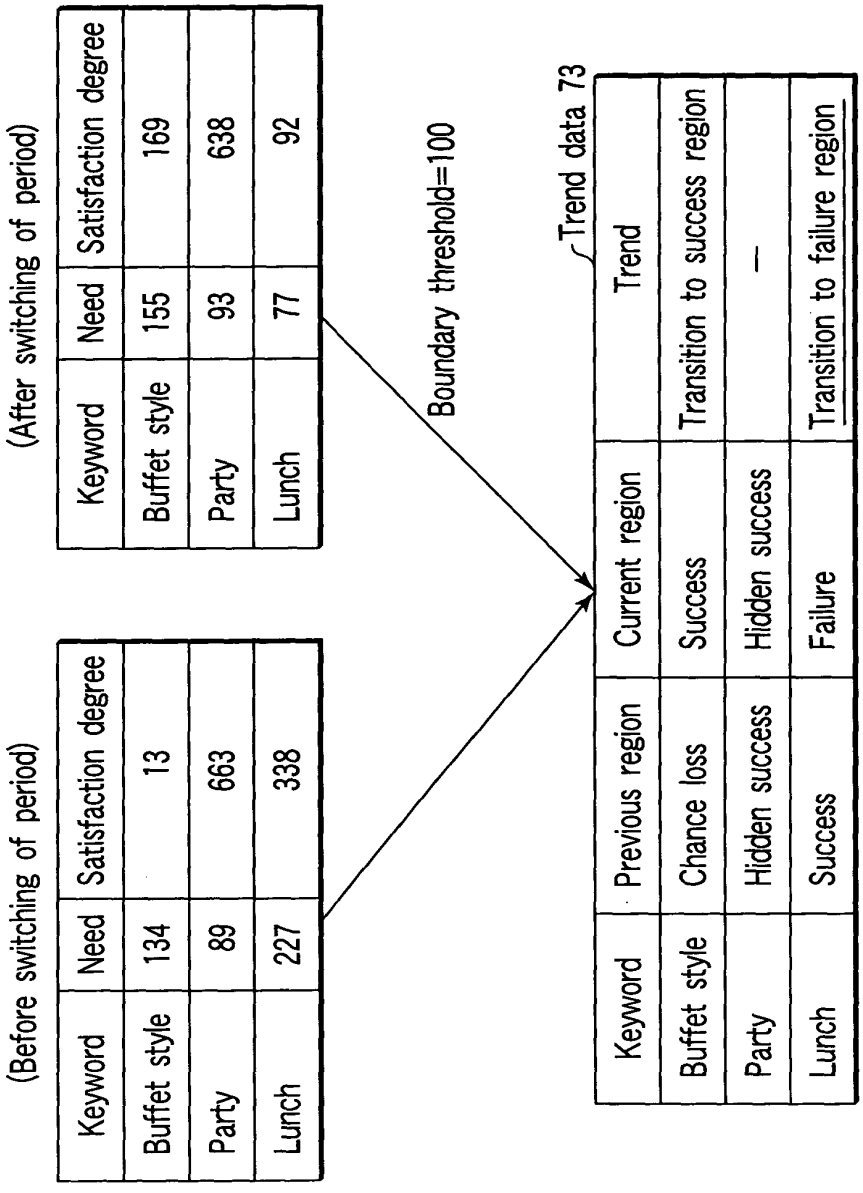

(Before switching of period)
Keyword
Need
Satisfaction degree
Buffet style
134
13
Party
89
663
Lunch
227
338
(After switching of period)
Keyword
Need
Satisfaction degree
Buffet style
155
169
Party
93
638
Lunch
77
92
Boundary threshold=100
Trend data 73
Keyword
Previous region
Current region
Trend
Buffet style
Chance loss
Success
Transition to success region
Party
Hidden success
Hidden success
—
Lunch
Success
Failure
Transition to failure region

FIG. 48

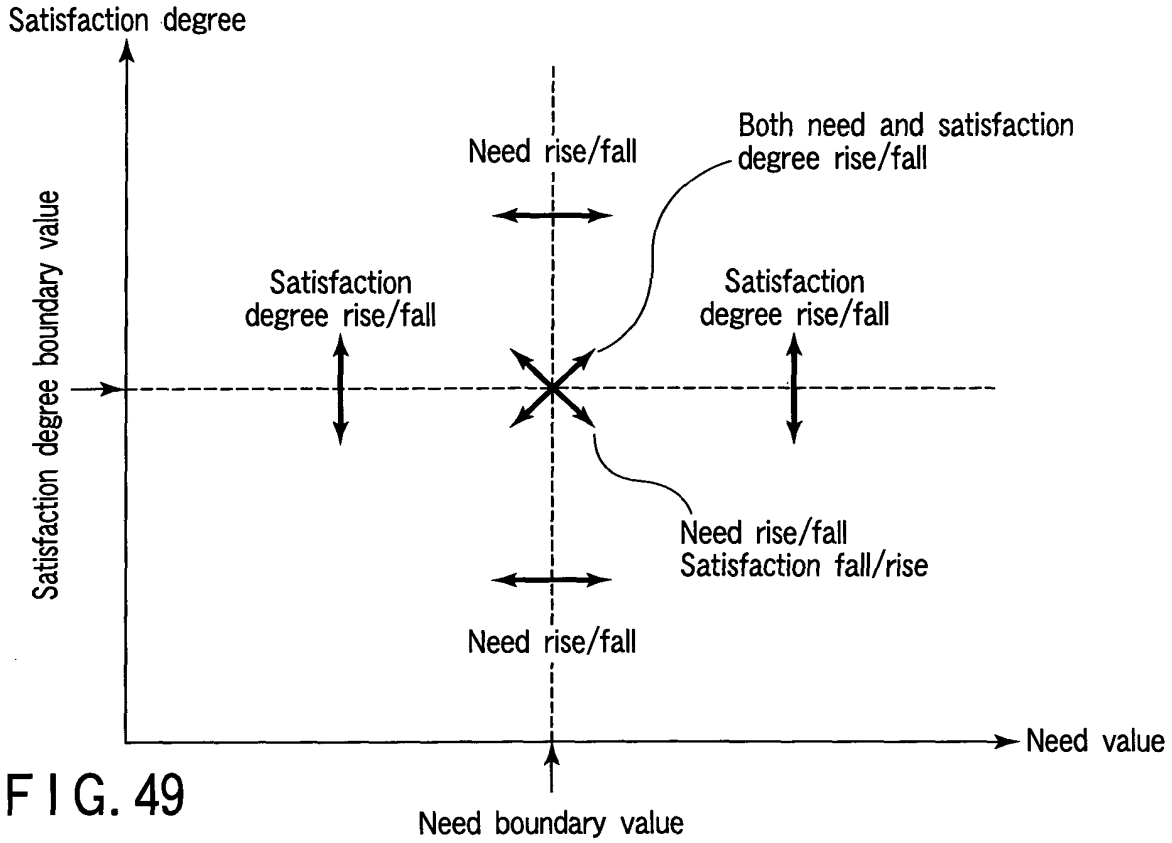

Satisfaction degree
Satisfaction degree boundary value
Need rise/fall
Both need and satisfaction degree rise/fall
Satisfaction degree rise/fall
Satisfaction degree rise/fall
Need rise/fall
Satisfaction fall/rise
Need rise/fall
Need value
Need boundary value

FIG. 49

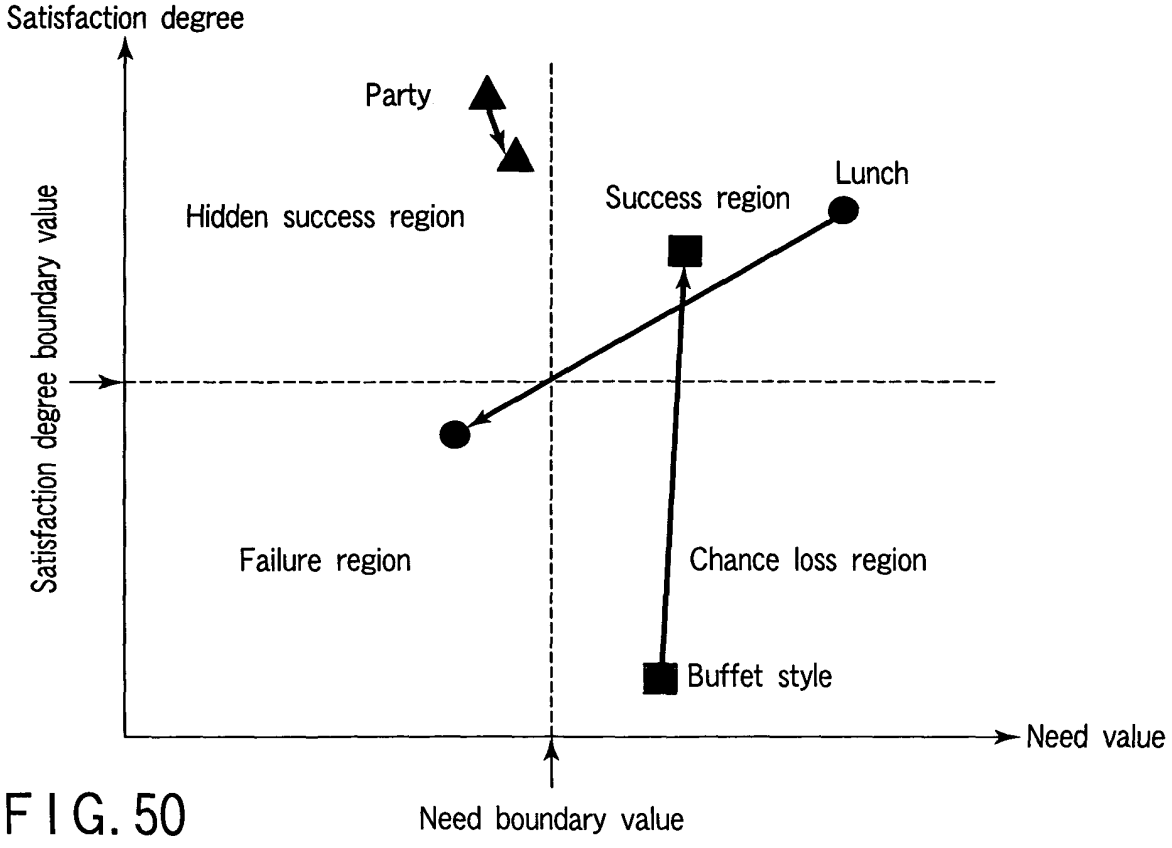

Satisfaction degree
Satisfaction degree boundary value
Party
Hidden success region
Success region
Lunch
Failure region
Chance loss region
Buffet style
Need value
Need boundary value

FIG. 50

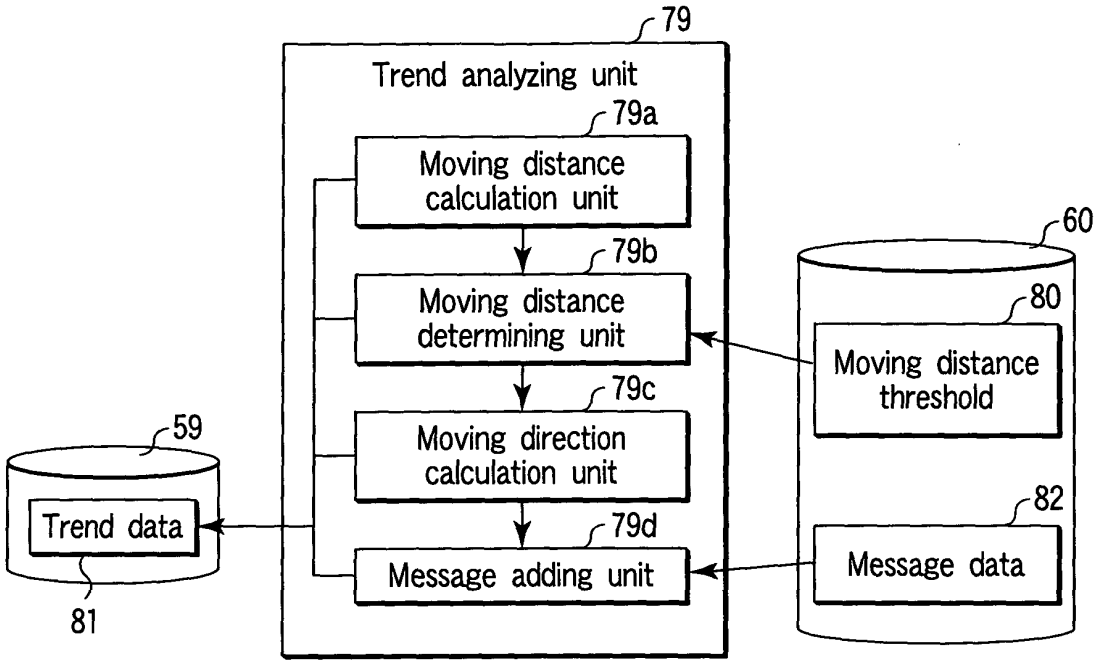


FIG. 51

(In case where moving distance threshold is 120)

Moving distance D	Action
D < 120	—
120 ≦ D	Calculate moving direction, adding of message

FIG. 52

Moving direction θ	Message to be added
$0^\circ \leqq \theta < 30^\circ$	Need rises
$30^\circ \leqq \theta < 60^\circ$	Need/satisfaction degree rise
$60^\circ \leqq \theta < 120^\circ$	Satisfaction degree rises
$120^\circ \leqq \theta < 150^\circ$	Need falls while satisfaction degree rises
$150^\circ \leqq \theta < 210^\circ$	Need falls
$210^\circ \leqq \theta < 240^\circ$	Both need and satisfaction degree fall
$240^\circ \leqq \theta < 300^\circ$	Satisfaction degree falls
$300^\circ \leqq \theta < 330^\circ$	Need rise while satisfaction degree falls
$330^\circ \leqq \theta < 360^\circ$	Need rises

FIG. 53

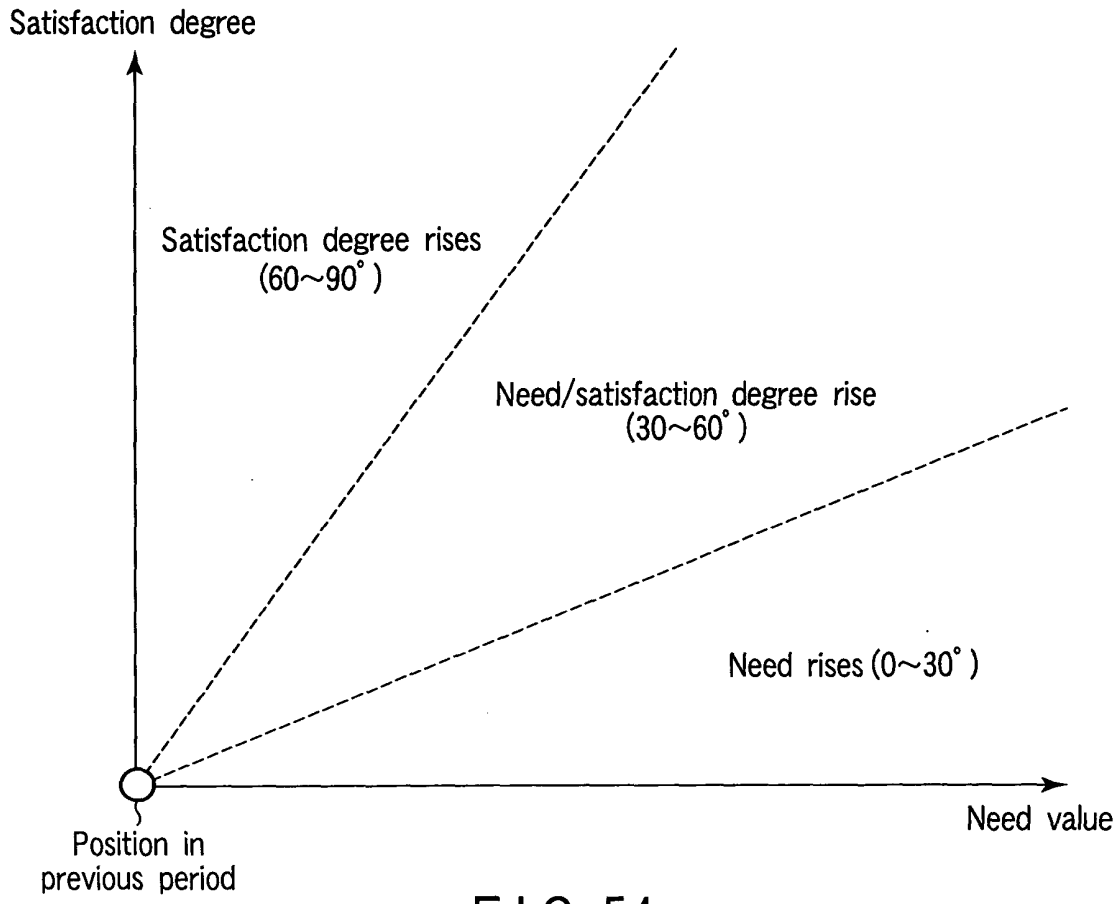
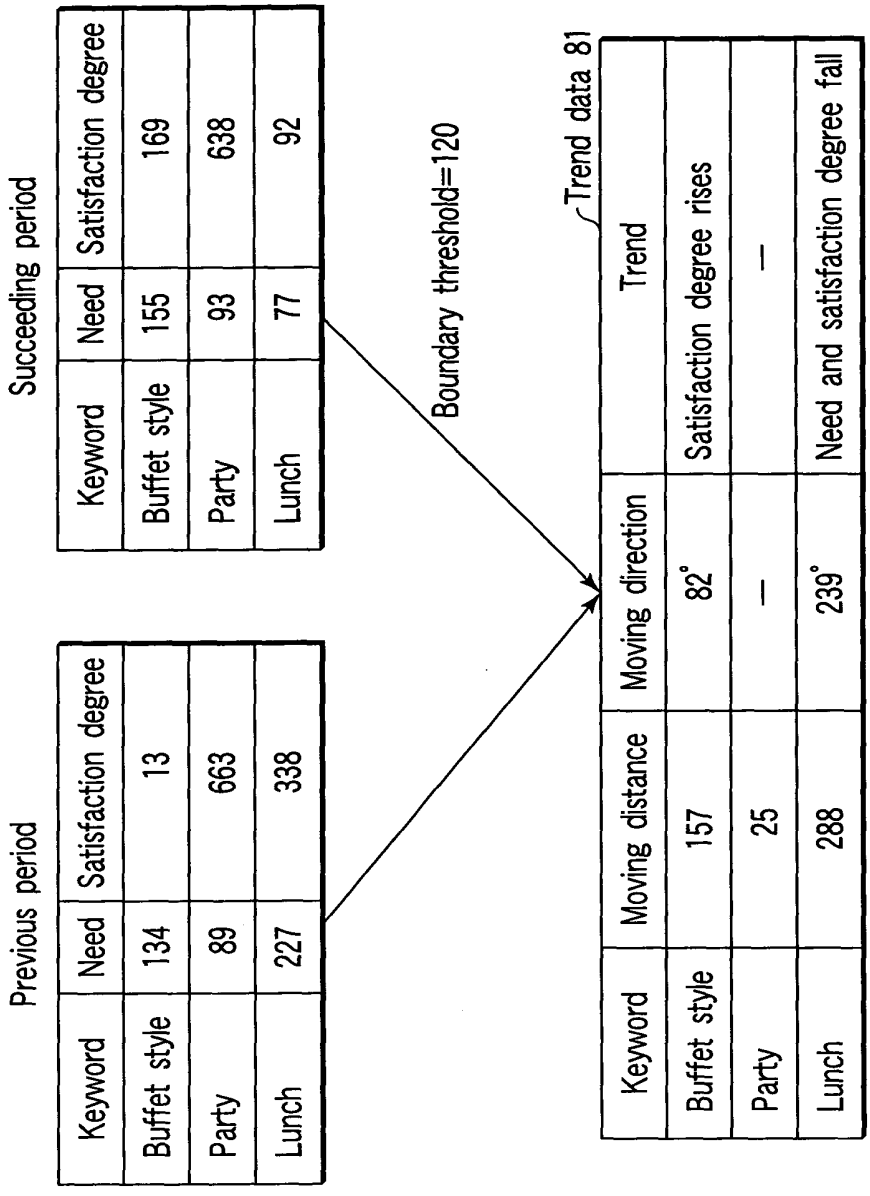


FIG. 54



Keyword	Need	Satisfaction degree
Buffet style	134	13
Party	89	663
Lunch	227	338

Keyword	Need	Satisfaction degree
Buffet style	155	169
Party	93	638
Lunch	77	92

Keyword	Moving distance	Moving direction	Trend
Buffet style	157	82°	Satisfaction degree rises
Party	25	—	—
Lunch	288	239°	Need and satisfaction degree fall

FIG. 55

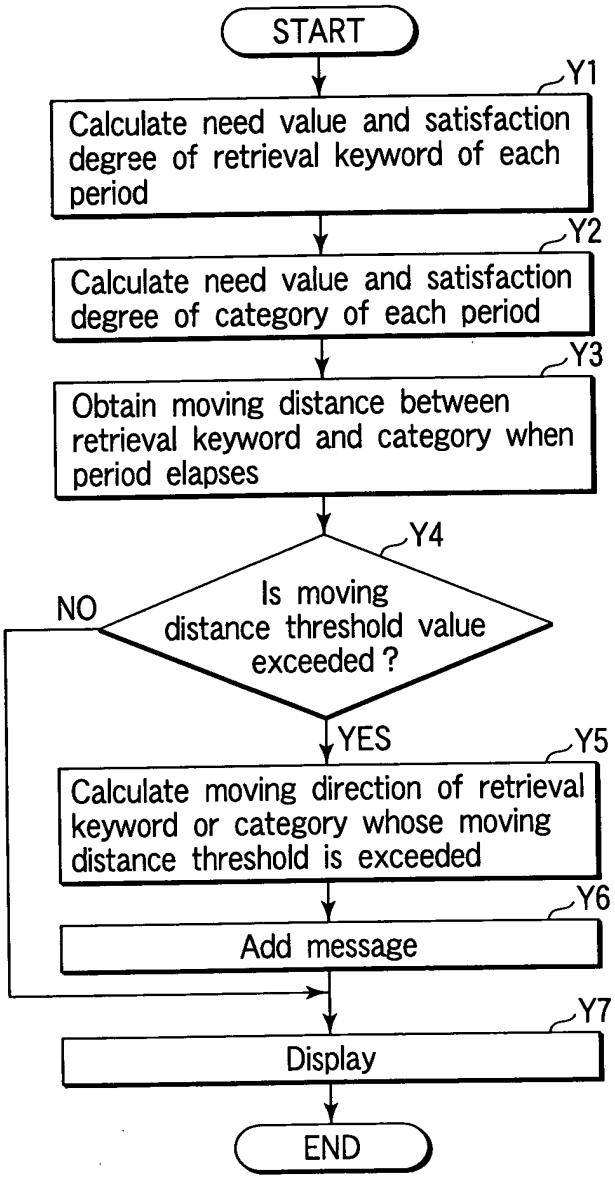

START
Y1
Calculate need value and satisfaction degree of retrieval keyword of each period
Y2
Calculate need value and satisfaction degree of category of each period
Y3
Obtain moving distance between retrieval keyword and category when period elapses
Y4
Is moving distance threshold value exceeded ?
NO
YES
Y5
Calculate moving direction of retrieval keyword or category whose moving distance threshold is exceeded
Y6
Add message
Y7
Display
END

FIG. 56

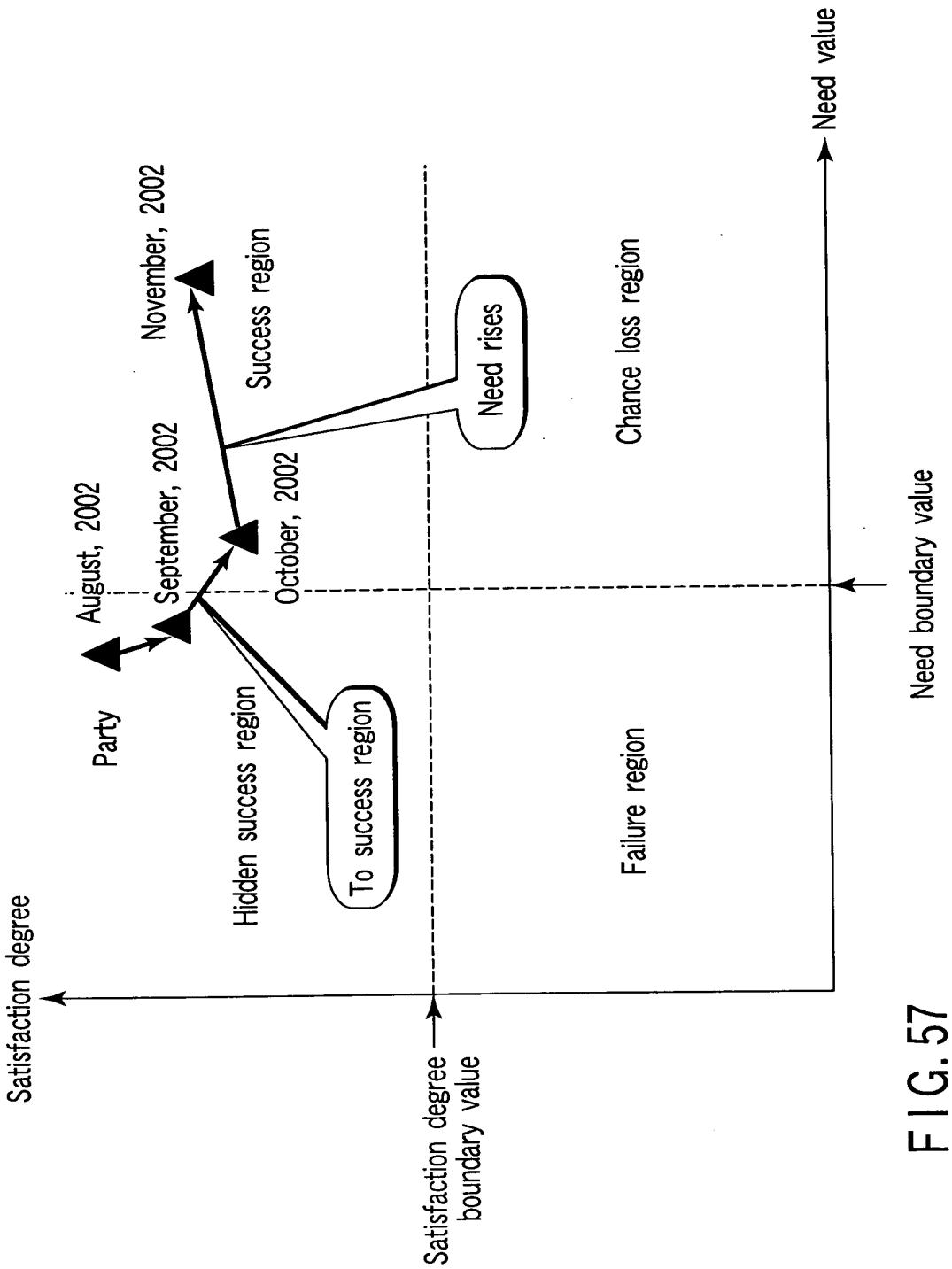

Satisfaction degree
Satisfaction degree boundary value
Need value
Need boundary value
Party
August, 2002
September, 2002
October, 2002
November, 2002
Success region
Need rises
Chance loss region
Hidden success region
To success region
Failure region

FIG. 57

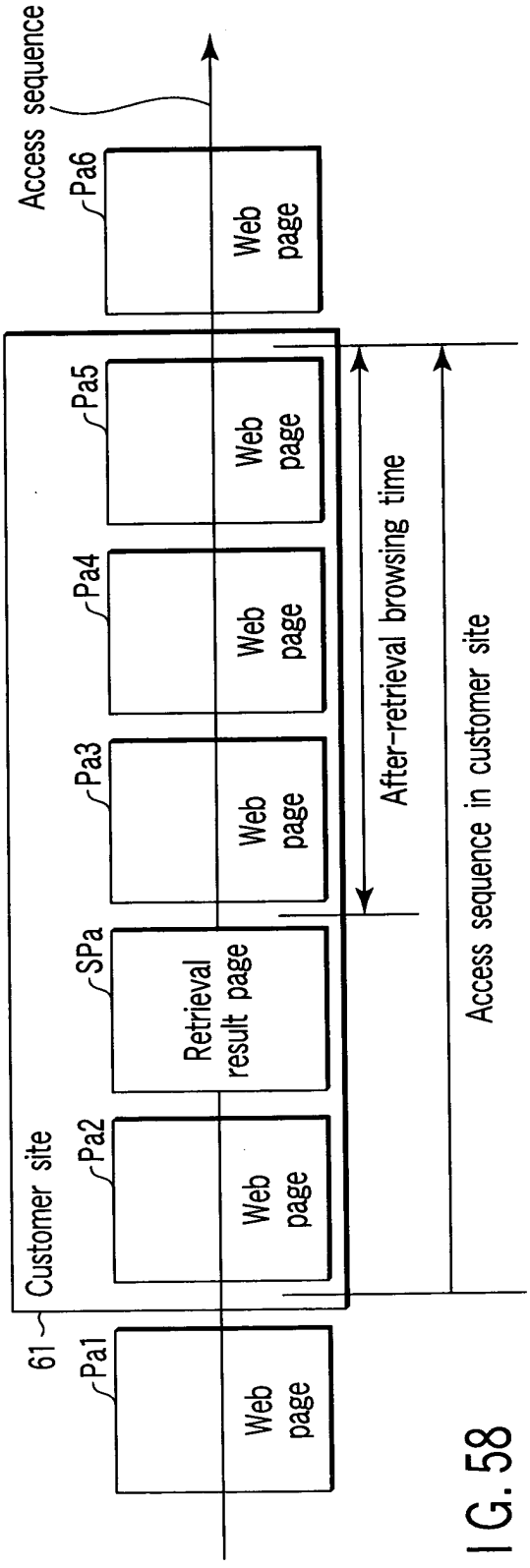

Access sequence
Pa6
Web page
Customer site
Pa5
Web page
Pa4
Web page
Pa3
Web page
SPa
Retrieval result page
Pa2
Web page
61
Pa1
Web page
After-retrieval browsing time
Access sequence in customer site

FIG. 58

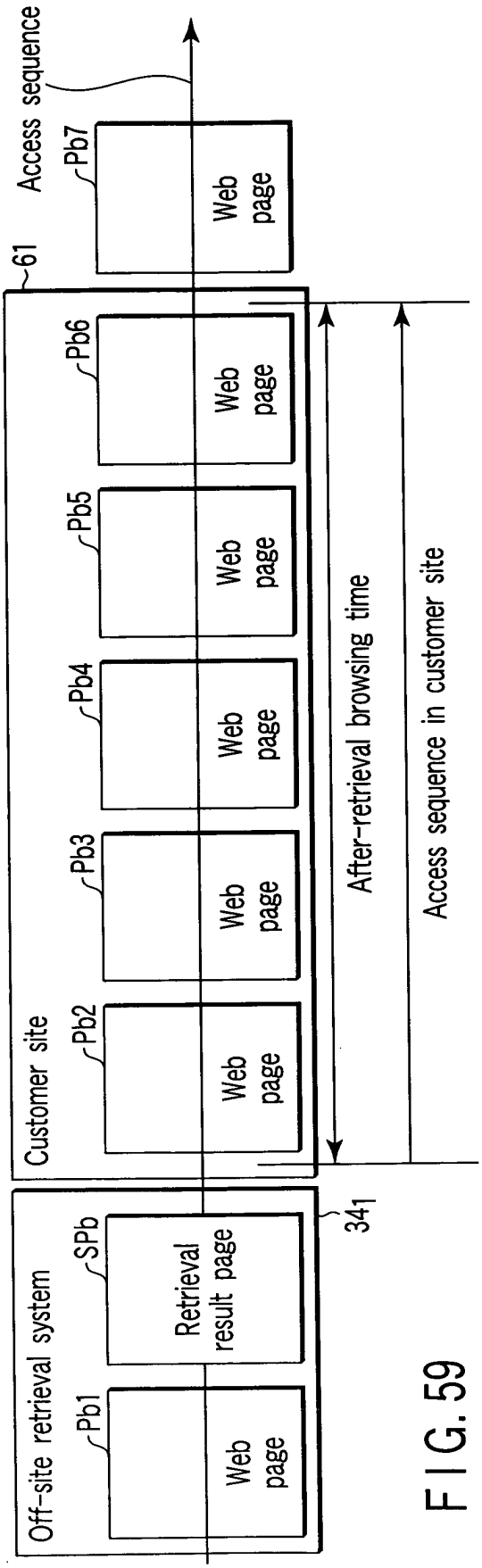

Access sequence
Pb7
Web page
61
Customer site
Pb6
Web page
Pb5
Web page
Pb4
Web page
Pb3
Web page
Pb2
Web page
Off-site retrieval system
SPb
Retrieval result page
Pb1
Web page
341
After-retrieval browsing time
Access sequence in customer site

FIG. 59

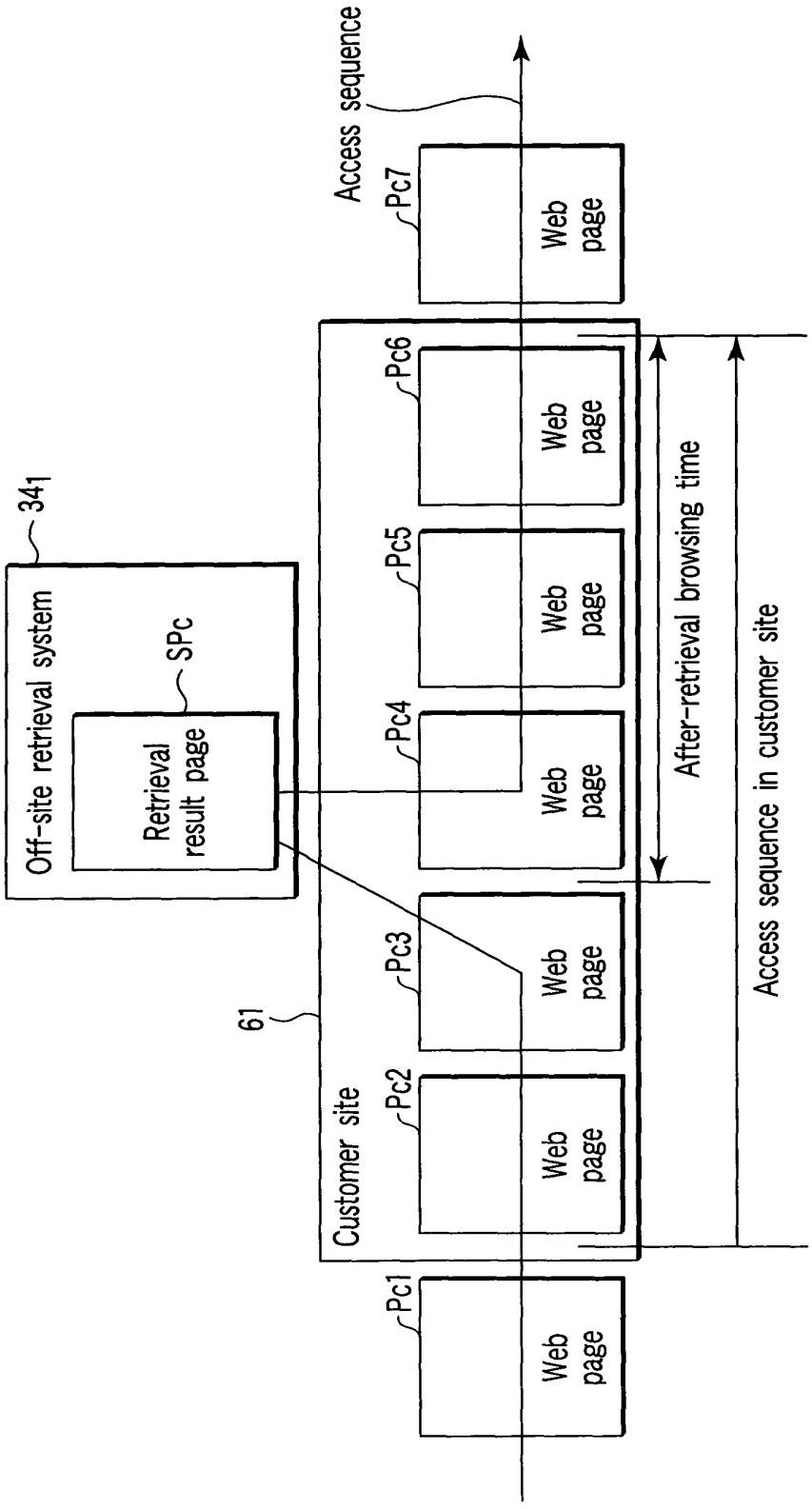

Access sequence
Pc7
Web page
Pc6
Web page
Pc5
Web page
Pc4
Web page
Pc3
Web page
Pc2
Web page
Pc1
Web page
Customer site
61
Off-site retrieval system
341
Retrieval result page
SPc
After-retrieval browsing time
Access sequence in customer site

FIG. 60

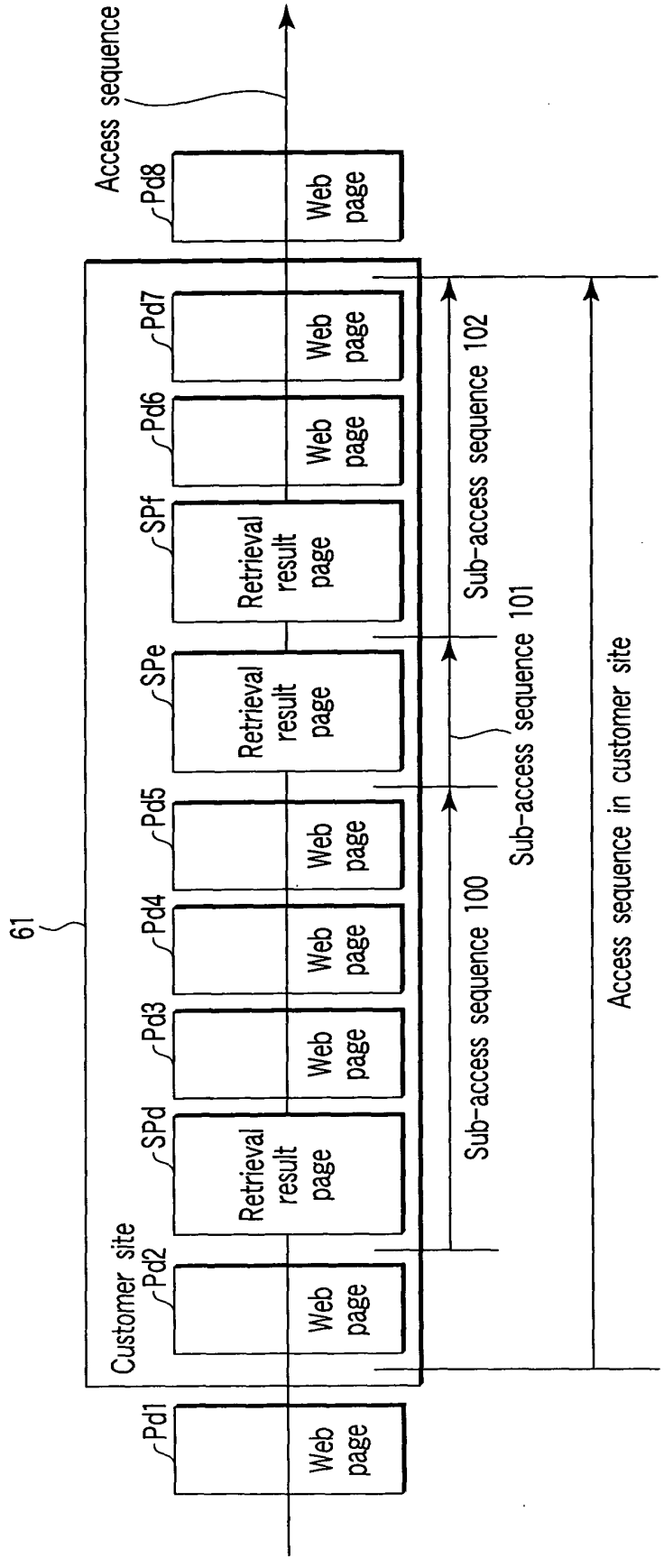

Access sequence
61
Customer site
Pd1
Pd2
SPd
Pd3
Pd4
Pd5
SPe
SPf
Pd6
Pd7
Pd8
Web page
Retrieval result page
Sub-access sequence 100
Sub-access sequence 101
Sub-access sequence 102
Access sequence in customer site

FIG. 61

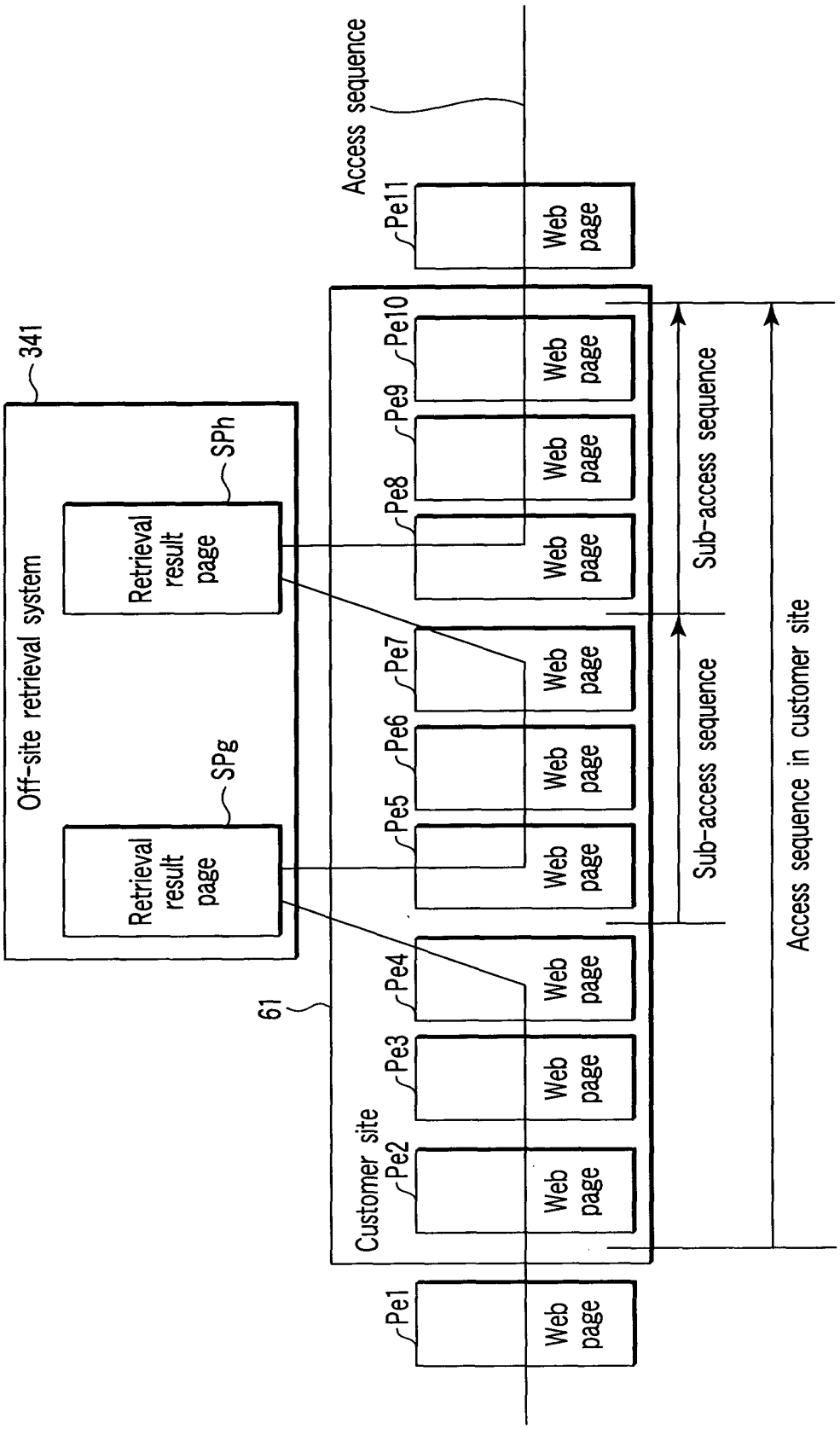

Access sequence
Pe11
Web page
341
Off-site retrieval system
SPh
Retrieval result page
SPg
Retrieval result page
Pe10
Pe9
Pe8
Pe7
Pe6
Pe5
Pe4
Pe3
Pe2
Pe1
Customer site
61
Sub-access sequence
Sub-access sequence
Access sequence in customer site

FIG. 62

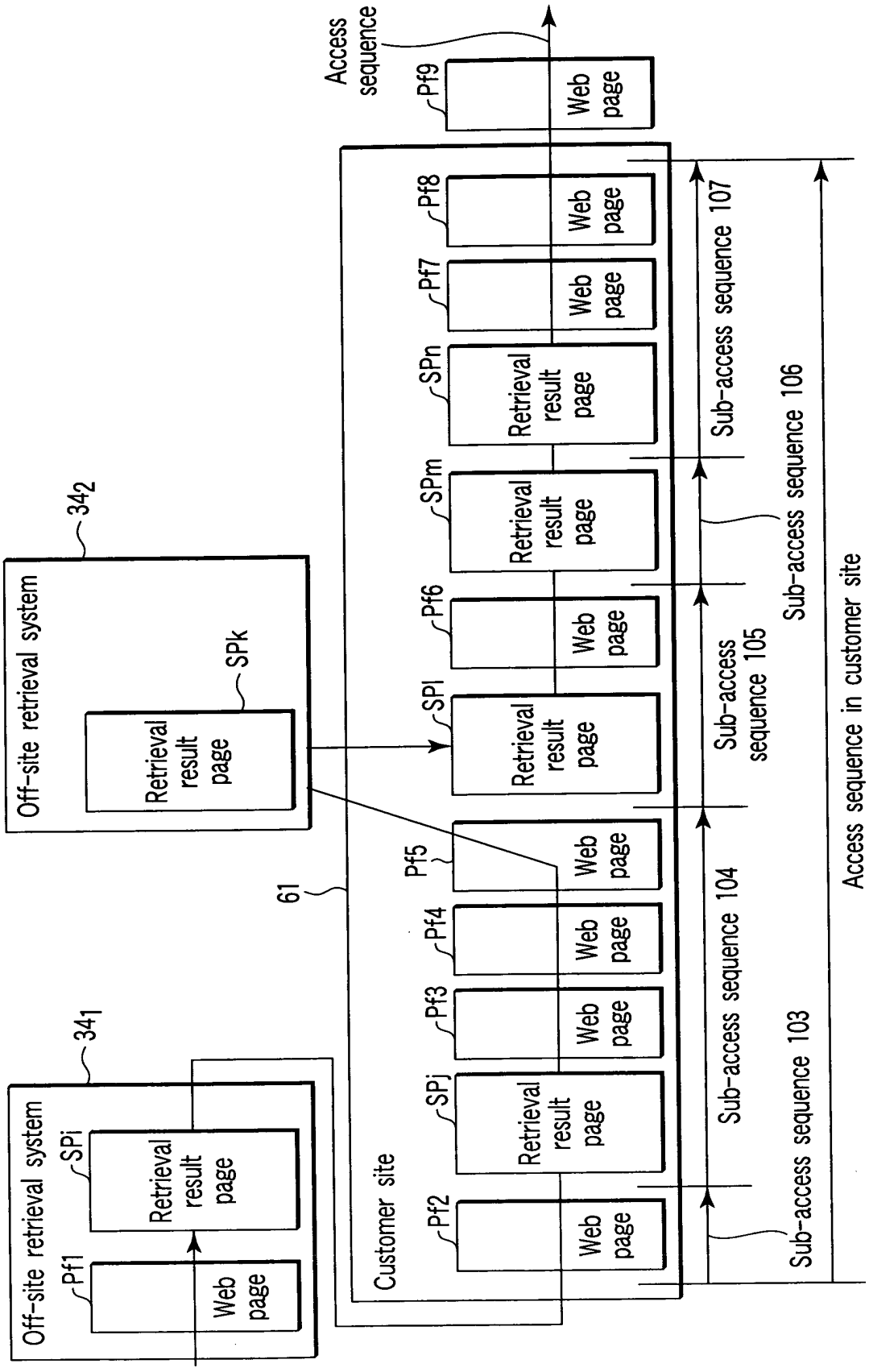

Access sequence
Off-site retrieval system
342
Retrieval result page
SPk
Off-site retrieval system
341
SPi
Retrieval result page
Pf1
Web page
61
Customer site
Pf9
Web page
Pf8
Web page
Pf7
Web page
SPn
Retrieval result page
SPm
Retrieval result page
Pf6
Web page
SPl
Retrieval result page
Pf5
Web page
Pf4
Web page
Pf3
Web page
SPj
Retrieval result page
Pf2
Web page
Sub-access sequence 107
Sub-access sequence 106
Sub-access sequence 105
Sub-access sequence 104
Sub-access sequence 103
Access sequence in customer site

FIG. 63

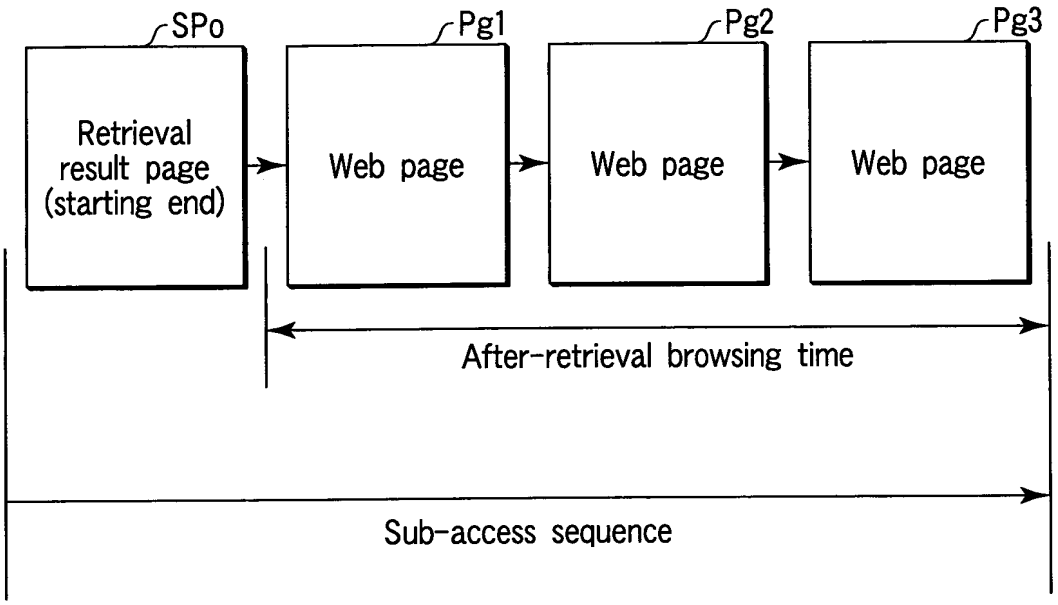

SPo
Pg1
Pg2
Pg3
Retrieval result page (starting end)
Web page
Web page
Web page
After-retrieval browsing time
Sub-access sequence

FIG. 64

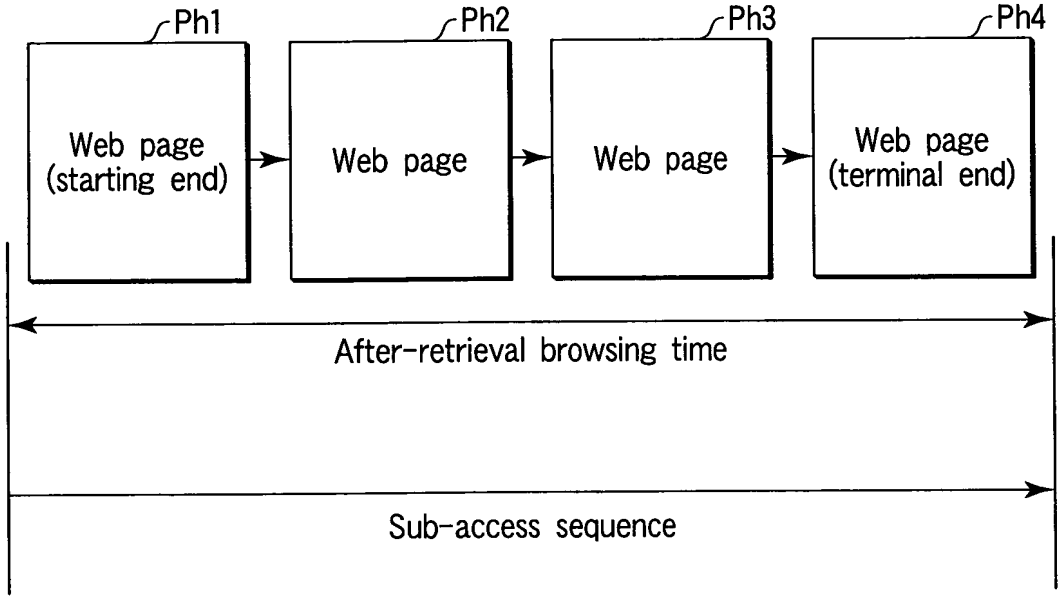

Ph1
Ph2
Ph3
Ph4
Web page (starting end)
Web page
Web page
Web page (terminal end)
After-retrieval browsing time
Sub-access sequence

FIG. 65

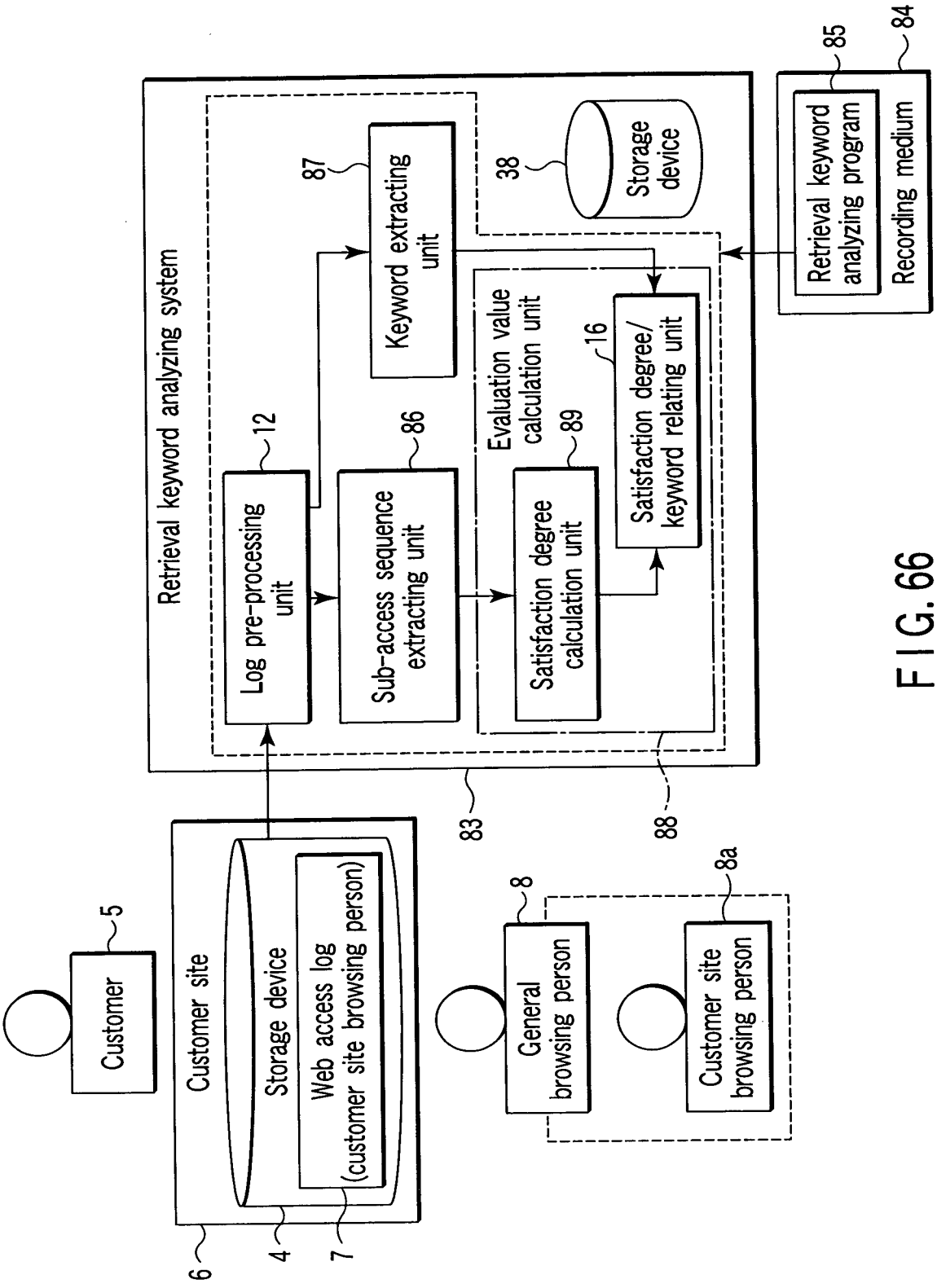

Customer
5
Customer site
Storage device
Web access log
(customer site browsing person)
6
4
7
General browsing person
8
Customer site browsing person
8a
Retrieval keyword analyzing system
Log pre-processing unit
12
Sub-access sequence extracting unit
86
Evaluation value calculation unit
Satisfaction degree calculation unit
89
Satisfaction degree/ keyword relating unit
16
Keyword extracting unit
87
Storage device
38
83
88
Retrieval keyword analyzing program
85
Recording medium
84

FIG. 66

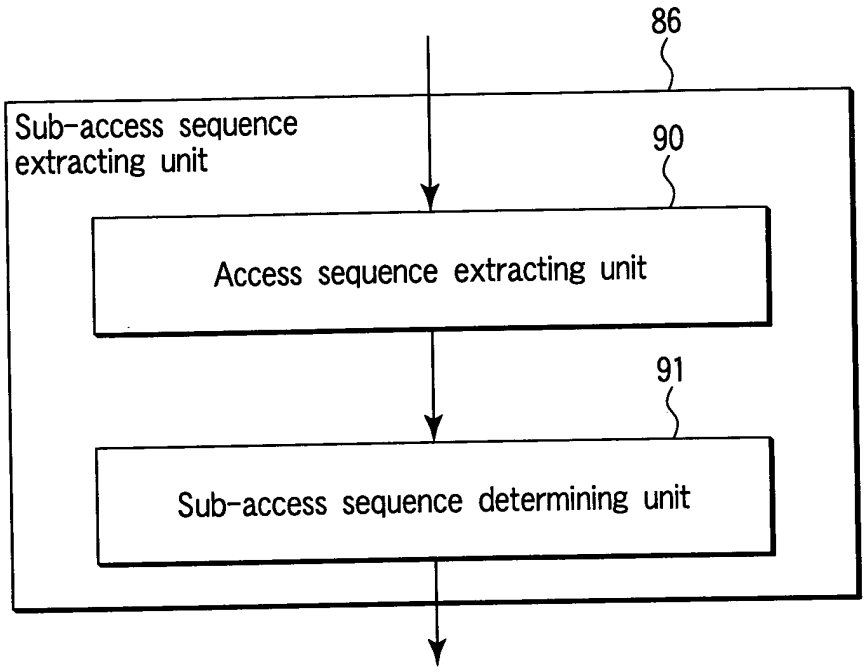

86
Sub-access sequence extracting unit
90
Access sequence extracting unit
91
Sub-access sequence determining unit

FIG. 67

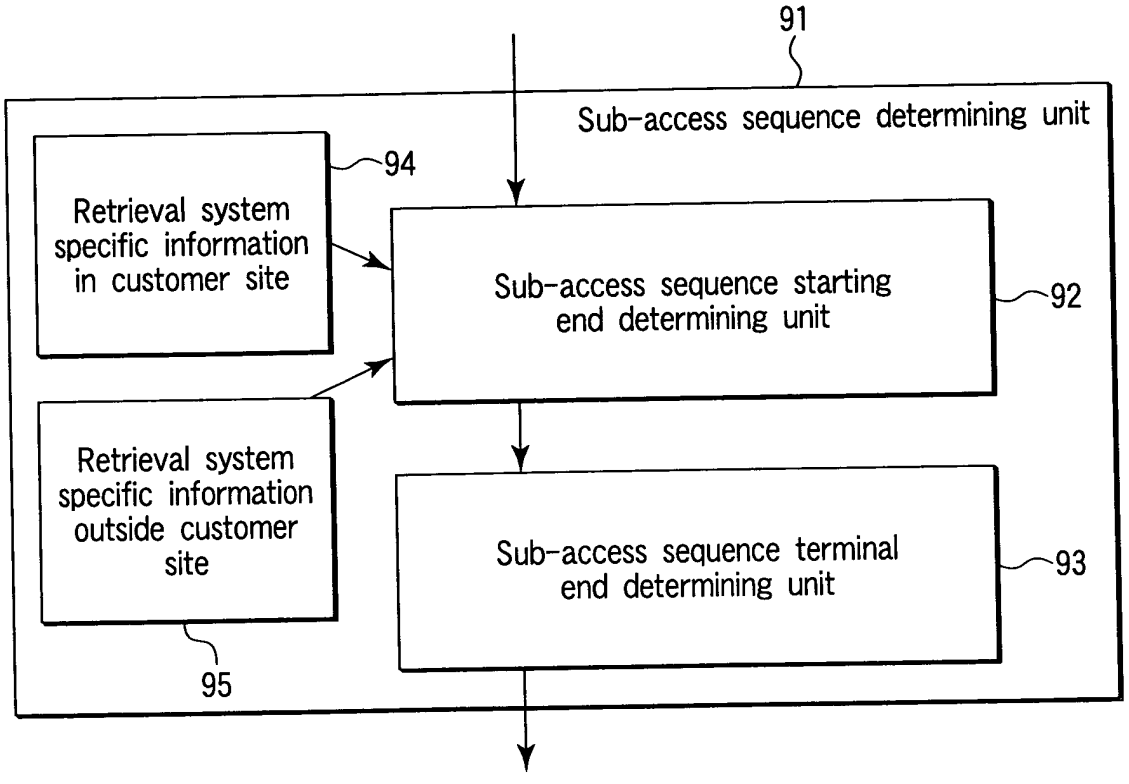

91
Sub-access sequence determining unit
94
Retrieval system specific information in customer site
Sub-access sequence starting end determining unit
92
Retrieval system specific information outside customer site
Sub-access sequence terminal end determining unit
93
95

FIG. 69

Access sequence data

View ID	Visit ID	Visitor ID	Date	Time	Request	Reference information
View 1	Visit 1	Visitor 1	2002/2/14	18:56:14	/AAA.html	http://www.□□□.ne.jp/search.cgi?kw=vegitable
View 2	Visit 2	Visitor 2	2002/2/14	18:57:30	/BBB.cgi	—
View 3	Visit 1	Visitor 1	2002/2/14	18:58:01	/CCC.html	http://www.○○○.co.jp/AAA.html
View 4	Visit 2	Visitor 2	2002/2/14	18:58:40	/search.cgi?q=food	http://www.○○○.co.jp/BBB.html
View 5	Visit 1	Visitor 1	2002/2/14	19:59:10	/EEE.html	—
...	...	...	...	...	...	...

FIG. 68

Temporary first table

View ID	Visit ID	Visitor ID	Date	Time	Request	Reference information
View 1	Visit 1	Visitor 1	2002/2/14	18:56:14	/AAA.html	http://www.□□□.ne.jp/search.cgi?kw=vegitable
View 3	Visit 1	Visitor 1	2002/2/14	18:58:01	/CCC.html	http://www.○○○.co.jp/AAA.html
View 5	Visit 1	Visitor 1	2002/2/14	18:59:10	/EEE.html	http://www.○○○.co.jp/CCC.html
View 6	Visit 1	Visitor 1	2002/2/14	19:00:12	/search.cgi?q=food	http://www.○○○.co.jp/EEE.html
View 8	Visit 1	Visitor 1	2002/2/14	19:01:23	/FFF.html	http://www.○○○.co.jp/search.cgi?q=food
View 13	Visit 1	Visitor 1	2002/2/14	19:02:25	/GGG.html	http://www.○○○.co.jp/FFF.html
View 2	Visit 2	Visitor 2	2002/2/14	18:57:30	/BBB.html	—
View 4	Visit 2	Visitor 2	2002/2/14	18:58:40	/search.cgi?q=food	http://www.○○○.co.jp/BBB.html
...	...	...	...	...	...	...

FIG. 70

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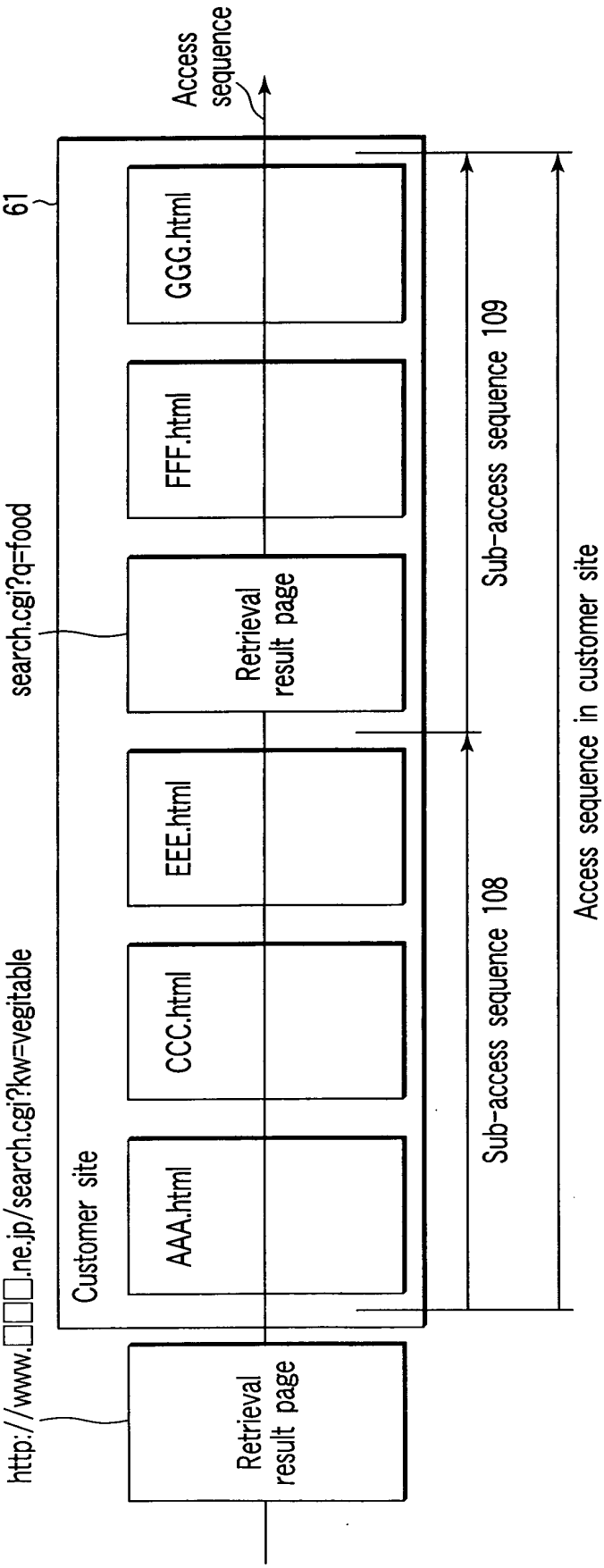
Access sequence
61
http://www.□□□.ne.jp/search.cgi?kw=vegitable
Retrieval result page
Customer site
AAA.html
CCC.html
EEE.html
search.cgi?q=food
Retrieval result page
FFF.html
GGG.html
Sub-access sequence 108
Sub-access sequence 109
Access sequence in customer site

FIG. 71

Temporary second table

View ID	Visit ID	Visitor ID	Date	Time	Request	Reference information	Starting end flag
View 1	Visit 1	Visitor 1	2002/2/14	18:56:14	/AAA.html	http://www.□□□.ne.jp/search.cgi?kw=vegitable	1
View 3	Visit 1	Visitor 1	2002/2/14	18:58:01	/CCC.html	http://www.○○○.co.jp/AAA.html	0
View 5	Visit 1	Visitor 1	2002/2/14	18:59:10	/EEE.html	http://www.○○○.co.jp/CCC.html	0
View 6	Visit 1	Visitor 1	2002/2/14	19:00:12	/search.cgi?q=banana	http://www.○○○.co.jp/EEE.html	1
View 8	Visit 1	Visitor 1	2002/2/14	19:01:23	/FFF.html	http://www.○○○.co.jp/search.cgi?q=banana	0
View 13	Visit 1	Visitor 1	2002/2/14	19:02:25	/GGG.html	http://www.○○○.co.jp/FFF.html	0
View 2	Visit 2	Visitor 2	2002/2/14	18:57:30	/BBB.html	—	0
View 4	Visit 2	Visitor 2	2002/2/14	18:58:40	/search.cgi?q=food	http://www.○○○.co.jp/BBB.html	1
...	...	...	...	...	...	...	...

FIG. 72

Retrieval system specific information outside customer site

URL of retrieval system	Query pattern
http://www.□□□.ne.jp/	kw
...	...

FIG. 73

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Temporary third table

View ID	Visit ID	Visitor ID	Date	Time	Request	Reference information	Starting end/ terminal end flag
View 1	Visit 1	Visitor 1	2002/2/14	18:56:14	/AAA.html	http://www.□□□.ne.jp/search.cgi?kw=vegitable	1
View 3	Visit 1	Visitor 1	2002/2/14	18:58:01	/CCC.html	http://www.○○○.co.jp/AAA.html	0
View 5	Visit 1	Visitor 1	2002/2/14	18:59:10	/EEE.html	http://www.○○○.co.jp/CCC.html	2
View 6	Visit 1	Visitor 1	2002/2/14	19:00:12	/search.cgi?q=banana	http://www.○○○.co.jp/EEE.html	1
View 8	Visit 1	Visitor 1	2002/2/14	19:01:23	/FFF.html	http://www.○○○.co.jp/search.cgi?q=banana	0
View 13	Visit 1	Visitor 1	2002/2/14	19:02:25	/GGG.html	http://www.○○○.co.jp/FFF.html	2
View 2	Visit 2	Visitor 2	2002/2/14	18:57:30	/BBB.html	—	0
View 4	Visit 2	Visitor 2	2002/2/14	18:58:40	/search.cgi?q=food	http://www.○○○.co.jp/BBB.html	1
...	...	...	...	...	...	...	...

FIG. 74

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Sub-access sequence data

View ID	Visit ID	Visitor ID	SubVisit ID	Date	Time	Request	Reference information	Off-site system flag
View 1	Visit 1	Visitor 1	SubVisit 1	2002/2/14	18:56:14	/AAA.html	http://www.□□□.ne.jp/search.cgi?kw=vegitable	1
View 2	Visit 2	Visitor 2	···	2002/2/14	18:57:30	/BBB.html	—	—
View 3	Visit 1	Visitor 1	SubVisit 1	2002/2/14	18:58:01	/CCC.html	http://www.○○○.co.jp/AAA.html	—
View 4	Visit 2	Visitor 2	SubVisit 3	2002/2/14	18:58:40	/search.cgi?q=food	http://www.○○○.co.jp/BBB.html	—
View 5	Visit 1	Visitor 1	SubVisit 1	2002/2/14	18:59:10	/EEE.html	http://www.○○○.co.jp/CCC.html	—
View 6	Visit 1	Visitor 1	SubVisit 2	2002/2/14	19:00:02	/search.cgi?q=banana	http://www.○○○.co.jp/EEE.html	0
···	···	···	···	···	···	···	···	···
View 8	Visit 1	Visitor 1	SubVisit 2	2002/2/14	19:01:23	/FFF.html	http://www.○○○.co.jp/search.cgi?q=banana	—
···	···	···	···	···	···	···	···	···
View 13	Visit 1	Visitor 1	SubVisit 2	2002/2/14	19:02:25	/GGG.html	http://www.○○○.co.jp/FFF.html	—
···	···	···	···	···	···	···	···	···

FIG. 75

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Satisfaction degree data

View ID	SubVisit ID	Satisfaction degree
View 1	SubVisit 1	40
View 2	—	—
View 3	SubVisit 1	40
View 4	SubVisit 3	10
View 5	SubVisit 1	40
...	...	...

FIG. 76

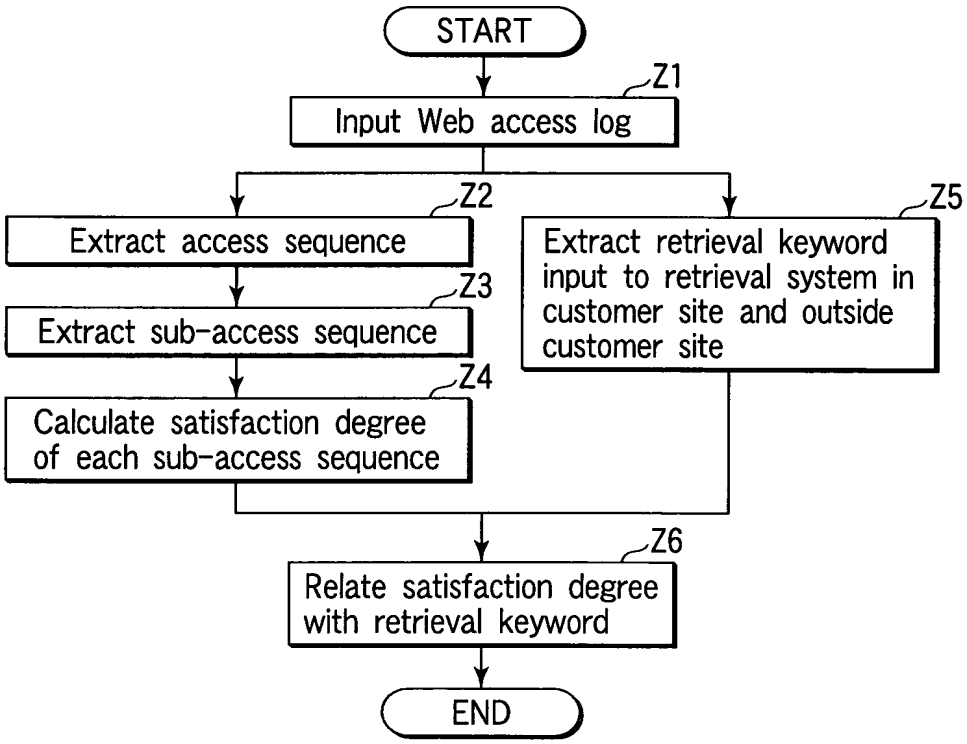

FIG. 77